No. 12.

No. 12.

THE
"INVICTA"

ILLUSTRATED PRICE LIST

OF

Engineers' and Joiners' Tools and Machinery,

MANUFACTURED, FACTORED, OR IMPORTED AND SOLD BY

C. NURSE & CO.

(ESTABLISHED IN 1841),

Plane Makers, Tool Merchants and Cutlers,

LONDON & SHEFFIELD.

Head Offices and Works:

182 & 184, WALWORTH ROAD, LONDON, S.E.
Telephone: 11521, Central.

Warehouse and Showrooms:

173, WALWORTH ROAD, LONDON, S.E.

City Branch Stores at—

144, BISHOPSGATE STREET WITHOUT, LONDON, E.C.
Telephone: 13498, Central.

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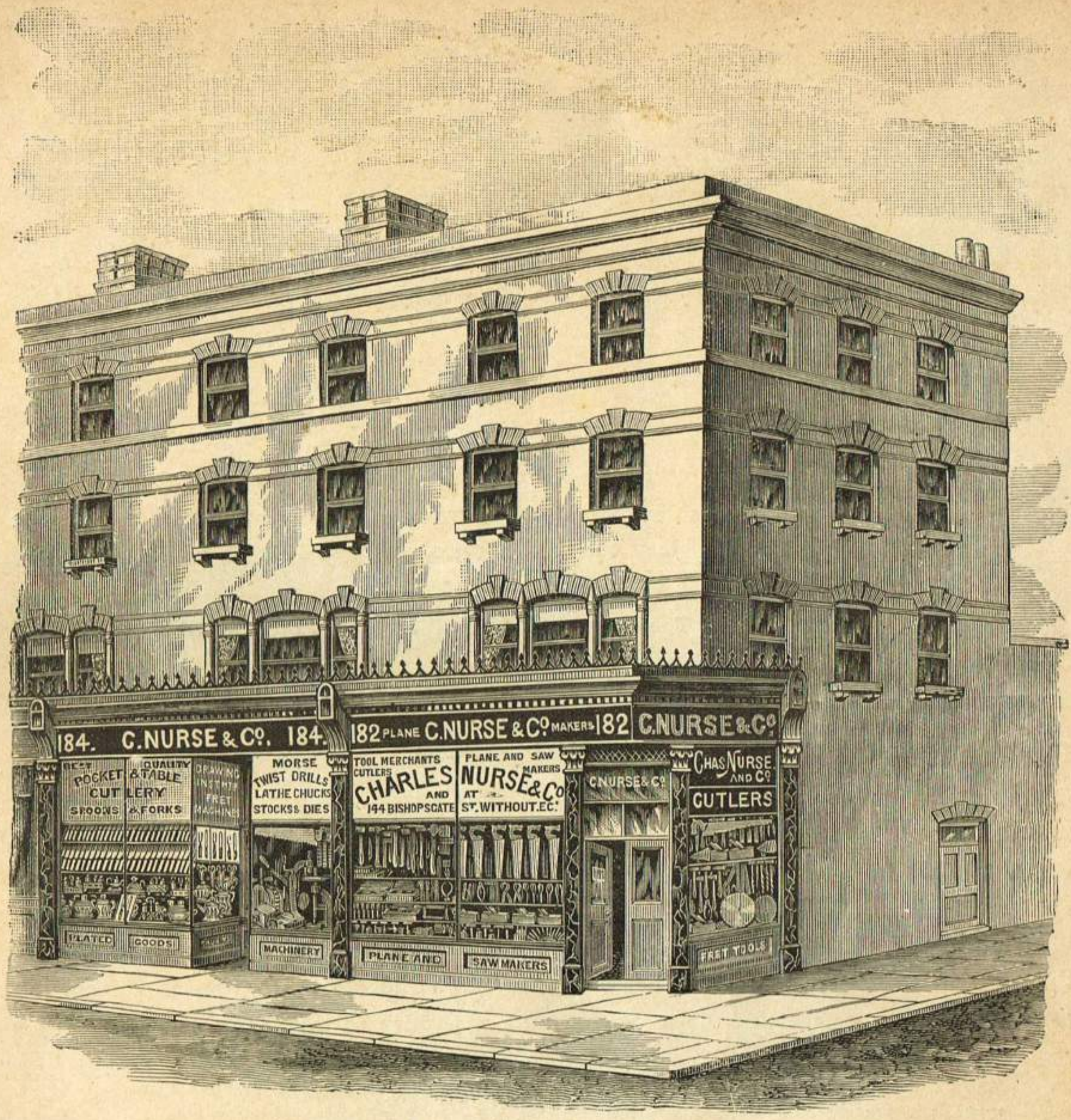
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Also at 144, BISHOPSGATE STREET WITHOUT, LONDON, E.C.,
100, FLEET STREET, LUDGATE CIRCUS, LONDON, E.C.,
And 48, FINSBURY PAVEMENT, MOORGATE STREET, LONDON, E.C.

CHARLES NURSE & Co. ILLUSTRATED LIST

THE CARPENTERS' NURSE.

Preface to our No. 12 Edition.

IN using once more the old illustration at the head of this page we are very forcibly reminded of the manner in which our business has grown beyond its original confines, for whereas even only 15 years ago our engraver's fancy of "The Carpenters' Nurse" somewhat fitly described the scope of our business, to-day it only refers to one section of many, each one of which shows increasing strength and importance.

Since the issue of our last Catalogue increasing business has compelled us to take No. 173, WALWORTH ROAD, in order to provide additional Warehouse and Show-room accommodation; we have also opened a new City Branch at No. 48, FINSBURY PAVEMENT, MOORGATE STREET, E.C., which is situate just above the new Great Northern Railway terminus for their very important Finsbury Park and district suburban traffic; just opposite to both the City and South London Electric Railway Station (Moorgate Street Station), and also the Moorgate Street Station of the Underground Railway; it is also situated only a few doors below the terminus of the North London Tramways, so that it is in a very convenient position to many of our customers in that district.

ENLARGEMENT OF CATALOGUE.—In each department of Tools we are showing a number of new patterns; 32 pages are added to the list, and as quite a number of old patterns have been discarded the number of improved patterns and additional articles is quite considerable. The Catalogue is not merely a reprint, it is entirely revised, and will be found to merit careful perusal.

SPECIAL NEW LINES.—Beyond the introduction of various new patterns in almost all lines, the principal additions to the Catalogue will be found in the inclusion of a much larger selection of Smiths' Tools, and also Pulleys, Shaftings, Hangers and Pulley Blocks, in all of which lines our List will be found most complete, and customers can rely upon prompt and careful attention to their requirements in these lines.

ISSUE OF CATALOGUES.—Past experience warns us that with the advent of every New Year a large number of Customers will be sure to write for a copy of our "NEW LIST." We would point out to all who have this No. 12 Catalogue that we are not at all likely to issue another Catalogue at least until 1906 or perhaps 1907; the alterations of prices are not sufficient to require it, and the expense attending the issue of so large a Catalogue prohibits it. Small supplementary Catalogues will be issued should occasion arise before another issue is required.

COLONIAL AND FOREIGN CLIENTS.—We often find that those of our Customers who are situated in the more remote parts of the World, frequently require Goods that are quite outside our regular stock lines of Goods, and among the various articles *which we have recently supplied* we might mention—Guns and Ammunition, Brass and Iron Bedsteads, Boots and Shoes, Calico, Harpoons, Anchors, Chains, Steering Gear, Photographic Chemicals, Beads, and other articles from Sewing Machines to Scaffold Ropes. In this connection we would say that wherever our Clients entrust such commissions to us, we will do our very utmost to procure the best value obtainable, and we will ship such Goods at a small commission over our actual outlay.

We would conclude with a special request to all our Customers to forward their orders TO US DIRECT.

Our trade and connection have been built up by considerably over half-a-century's careful attention to all the details of our business, and we are convinced that no house is in a position to supply goods of equal value at lower prices; and we have reason to know that many ironmongers will disingenuously offer to supply Tools at "NURSE & CO.'S" prices which never came out of our warehouses.

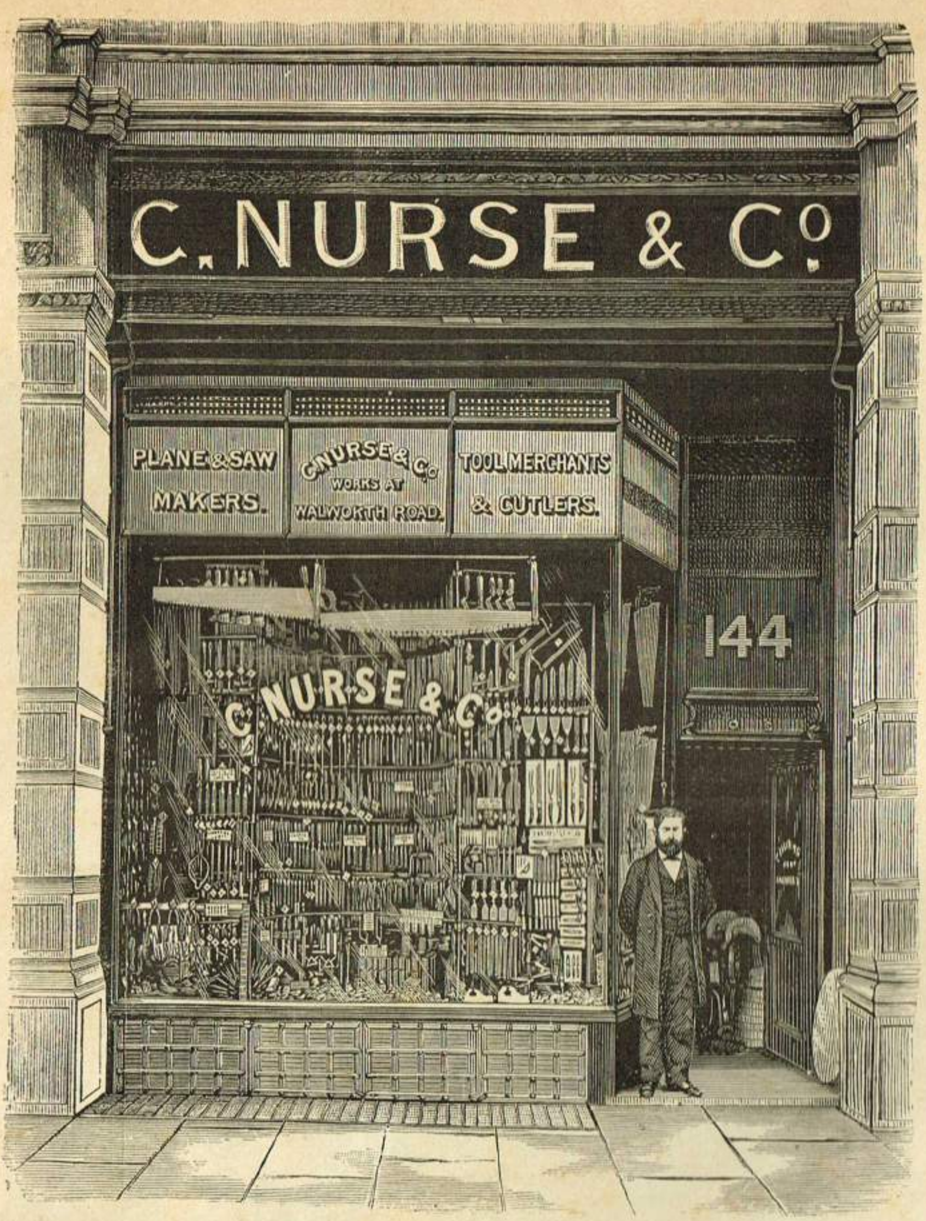
Direct trading, therefore, will ensure greater satisfaction to our Customers, and will help us to retain the high reputation our goods have earned in the past.

Thanking you for past favours, and respectfully soliciting a continuance of your esteemed orders and recommendations.

Yours faithfully,

Charles Nurse & Co.

THE "INVICTA" TOOL WORKS,
182 AND 184, WALWORTH ROAD, LONDON, S.E.
TELEPHONE EXCHANGE NO. HOP 1023.


C. NURSE & Co
PLANE & SAW MAKERS.
C. NURSE & Co WORKS AT WALWORTH ROAD.
TOOL MERCHANTS & CUTLERS.
C. NURSE & Co
144

The above is an Engraving from a Photograph of OUR CITY BRANCH at

144, Bishopsgate St. Without, London, E.C.

These Premises are very conveniently situated for any of our friends from the Provinces visiting London. They are within 2 minutes' walk of either Liverpool Street, Broad Street, or Bishopsgate Street Stations, so that they are very easily and conveniently reached by whichever of these lines of rail the City may be approached.

Warranty, Terms, Hours of Business, etc., etc.

WARRANTY.—Every Tool mentioned in this List (Grindstones and the lower-priced Tools of Foreign manufacture excepted) is Warranted to be of the Best Material, Workmanship, and Finish, and any faulty article will be exchanged if returned within one month from date of purchase.

CASH WITH ORDER.—All Orders must be accompanied by Cheque, Post-Office Order, or Postal Note, or the goods cannot be forwarded. No allowance can be made for postage or the cost of forwarding money. Our nearest Post-Office is No. 227, Walworth Road; but, to ensure the safety of remittances, customers are particularly requested to cross all Cheques, Post-Office Orders, or Postal Notes—

London and Midland Bank,

a/c of CHARLES NURSE & Co.

In no case can a Ledger Account be opened without the receipt of satisfactory Trade or Bank References. When such References are satisfactory, we allow a Monthly Account; but in such cases payment is expected by the 15th of the month following delivery of the goods.

All Export Orders should be accompanied by Banker's Draft or an order for payment on presentation of shipping documents.

CARRIAGE.—We will pay Carriage on all orders of £1 and upwards to any Railway Station in England or Wales. Carriage will be paid to any Railway Station in Scotland, Ireland, or the Channel Islands on orders of £2 and upwards.

Exceptions.—*Grindstones and Machinery, etc.*—In no case can we pay Carriage upon Grindstones or Machinery at prices herein quoted, but we shall be pleased to quote lowest prices for these delivered to any address, upon receipt of specification of goods required. Such exceptions are specially noted in Catalogue as being Carriage Forward, and comprise briefly such articles as Anvils, Benches, etc., and such goods whose weights are disproportionate to their value.

PARCELS POST.—For small parcels this offers a cheap and expeditious manner of delivery. The charges are 3d. for the first pound, and 1d. for subsequent pounds up to the limit of eleven pounds. Customers are requested to forward sufficient to cover the postal charges; should too much be sent, we shall always be pleased either to return stamps to balance, or to add some small article to make the account correct.

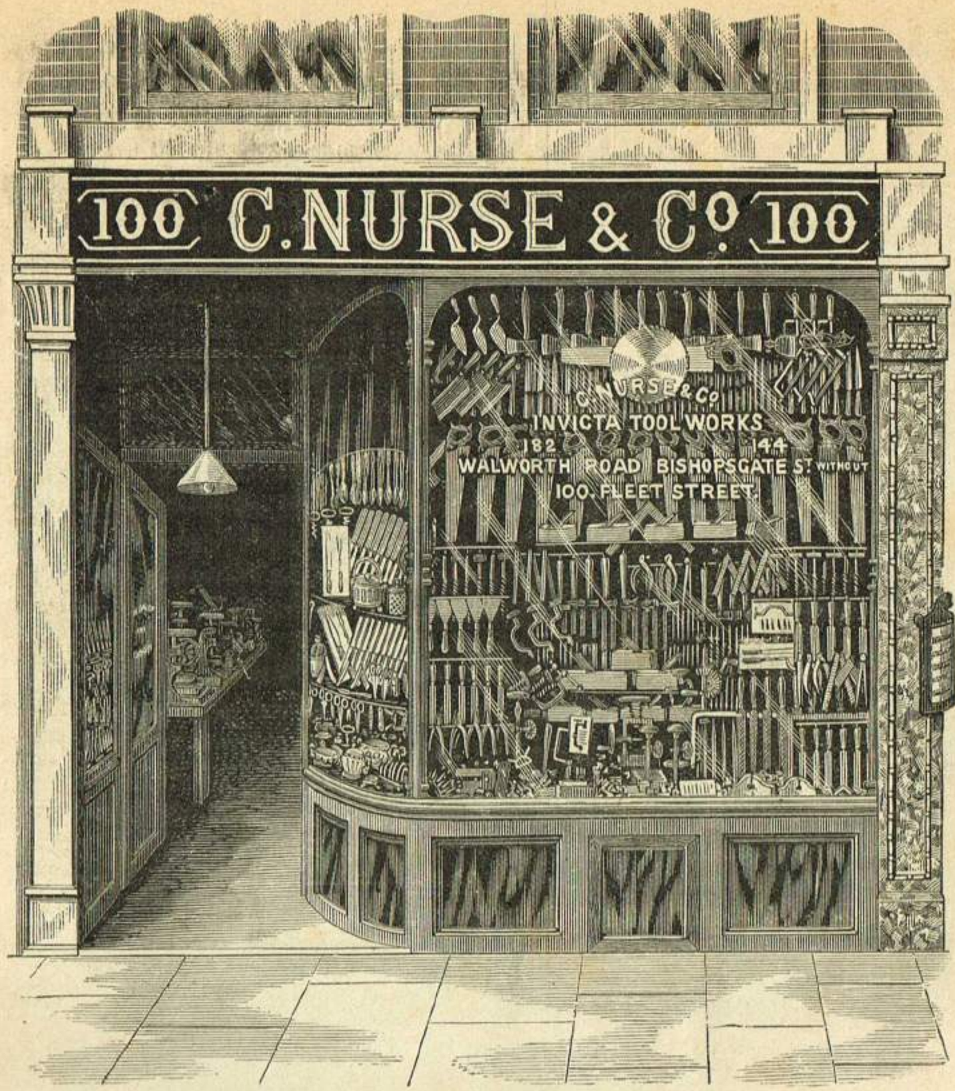
DISCOUNT.—A discount of 2½ per cent. will be allowed on all orders of £2 10s., and of 5 per cent. on all orders of £5 in value, except on prices of Machinery, Lathes, and a few other items specially marked Nett in Catalogue.

CAUTION.—Whereas many Ironmongers are in the habit of offering to supply Tools at "NURSE and CO.'S prices," but supplying articles that never came from us, we would particularly request that all orders be sent to us *direct*, when they will receive our most careful and prompt attention, and customers can rely upon receiving goods of the highest possible quality only.

CARRIAGE ON EXPORT ORDERS.—We pay the Carriage on all Export Orders over £10 in value (Machinery, Grindstones, and Benches excepted) to any of the following ports:—Accra, Adelaide, Alexandria, Bombay, Calcutta, Cape Town, Colombo, Demerara, Durban, East London, Hongkong, Lisbon, Madras, Malta, Melbourne, Montreal, New York, New Zealand, Old Calabar, Penang, Port Elizabeth, Quebec, Sekondi, Sierra Leone, Sydney, Trinidad, West Indies, or any other ports to which freightage does not exceed the charges to above ports. Goods will be packed free of charge, but no discount whatever can be allowed from List prices. In no case do we pay Landing, Clearing, or Customs' charges.

Exceptions.—*Grindstones and Machinery and other goods marked in List Carriage Forward.*—In no case can we pay freightage upon above, but we will pack securely and deliver free to any English port for 5 per cent. extra to List prices of goods. When desired, we shall be pleased to quote specially for any description of Machinery delivered to any port.

HOURS OF BUSINESS.—8.30 a.m. to 8.30 p.m. THURSDAYS to 1 p.m. SATURDAYS to 10 p.m. Telephone No. Hop 1023.

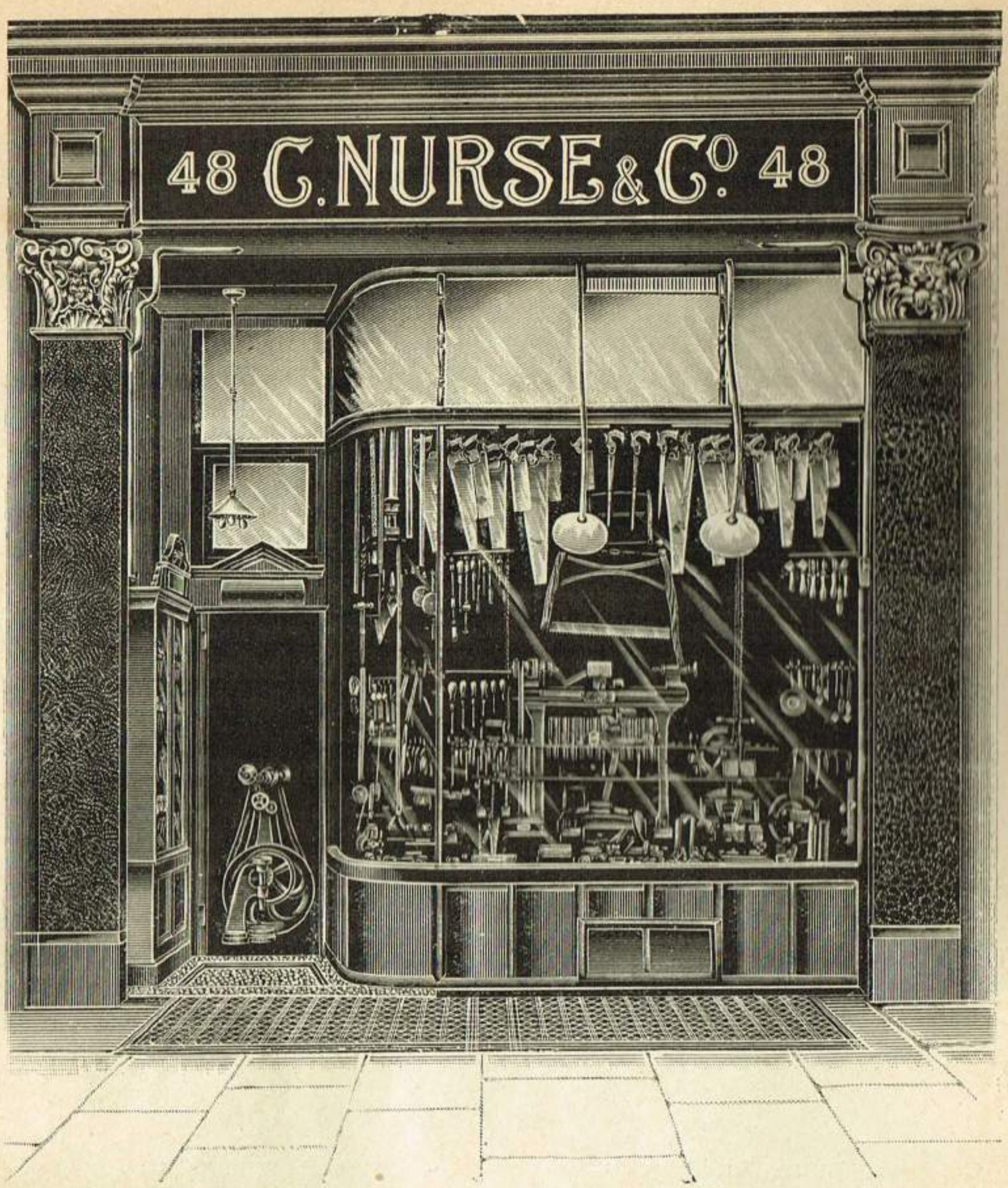


CENTRAL CITY BRANCH - - - 100, FLEET STREET.

Our Branch Store at 100, Fleet St.,

Is only One Door West of Ludgate Circus, and is within sight of St. Paul's Cathedral. Ludgate Hill and St. Paul's Railway Stations are within 3 minutes' walk, and 'buses from almost all parts of London pass the door.

The Premises are newly built, and mark the commencement of the long-talked of and much-needed widening of Fleet Street and the Strand.



The above is an engraving made from a photograph of our latest City Branch at

48, FINSBURY PAVEMENT, MOORGATE ST., LONDON, E C.

These premises are very centrally situated, and are only a few doors above the new Great Northern Railway Terminus for their large Finsbury Park and district suburban traffic, nearly opposite to the Moorgate Street Stations of both the City and South London Railway and also the Underground Railway, and are also only a few yards below the City Terminus of the North London Tramway System. Our premises here form a portion of Finsbury Pavement House, which is one of those prominent structures that are typical of modern London.

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We have recently opened a new Branch at SHEFFIELD. Address: 36, Angel Street.

Telephone 29x3.

Our Telephone numbers are now as under, the old number 1023 Hop being discontinued:

182-184, Walworth Road ... ... 11521 Central.
144, Bishopsgate Street Without ... 13498 „
100, Fleet Street ... ... 9675 „
48, Finsbury Pavement ... ... 9185 „

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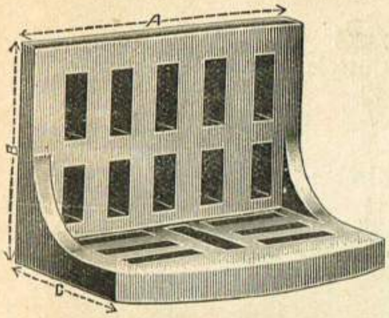
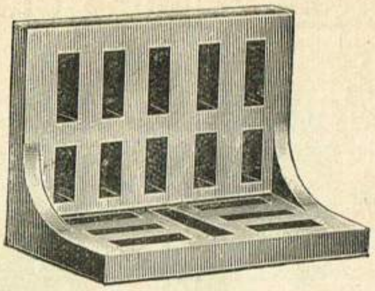
LATEST ADDITIONS, ALSO OMISSIONS AND ERRORS.

Angle Plates.

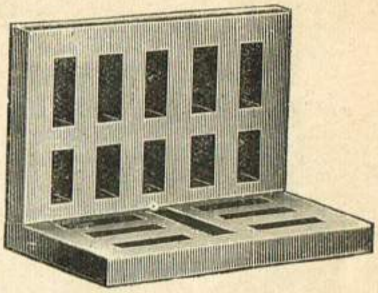
2626 The saving of time effected by the use of an Angle Plate, owing to the facility with which work can be accurately fixed, renders it an indispensable adjunct to the Planing, Shaping, and Drilling Machine, or the Lathe. The Amateur will find these very useful for fixing work on the Faceplate, for either Boring or Turning. They are planed on outside faces and edges, and will be planed on the inside faces if required.



No. A.



No. B.



PRICE LIST.

Pattern No.	0	1	3	5	6	7	9	10	11	13	15	17	19	21	23
Length A. in.	3	3	3	3½	3½	4	4	4½	5	5	6	7	8	10	11
Breadth B. in.	1½	2	2½	2½	3	2½	3	4	4	5	5	5½	5½	6	7
„ C. in.	1½	2	2	2½	2½	2½	3	3	4	4	4½	4½	4½	6	7
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Price (No. A)	1 6	2 0	2 6	2 9	3 0	3 3	3 9	5 6	6 6	6 9	8 0	9 0	10 0	15 0	17 6
„ (No. B)	2 3	2 9	3 6	4 3	4 4	4 9	5 3	7 0	8 6	8 9	10 6	11 6	12 6	19 0	21 6

PRICE No. A.—Planed on outside Faces and Edges. PRICE No. B.—Planed all over.

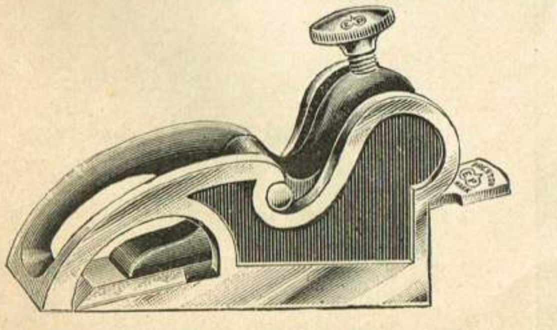
New Patent Square Hole Drilling Apparatus.

2627 This ingenious arrangement can be easily attached to a drilling machine, and with it perfectly square holes can be bored at one operation in either iron, brass, stone, or wood. It can also be arranged for drilling hexagon holes as well as square holes at an additional cost of 25/- for No. 1 and 30/- each for Nos. 2 and 3, or the apparatus can be supplied for drilling hexagon shaped holes only at ordinary list prices.

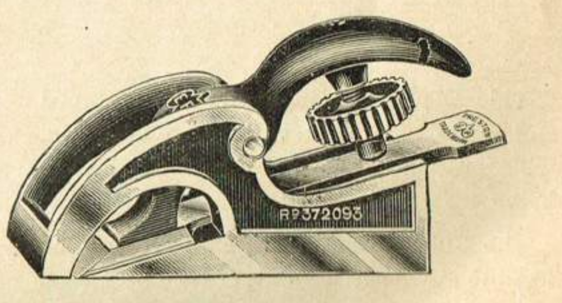
PRICES.

No. 1.	Boring holes from ¼in. to 9/16in., including 6 Drills ...	£7 0 0	Extra Drills, 1/- each.
No. 2.	„ „ „ 5/16in. „ 1in., „ „ ...	9 10 0	„ „ 1/6 „
No. 3.	„ „ „ ½in. „ 1¼in., „ „ ...	12 0 0	„ „ 2/- „

Improved Pattern English Iron Planes.



1005B	Japanned Bull-nose Planes ...	3/- each.
1005N	Nickel-plated Ditto	3/6 „



1006B	Japanned Bull-nose Plane ...	3/9 each.
1006N	Nickel-plated Ditto	4/6 „

Pattern Makers' Thumb Planes.

Any length up to 6in., and with irons from ¾in. up to 1¾in. wide, circled to any sweeps desired, 3/- each. Pattern Makers' Thumb Planes, with 6 changeable bottoms of varying sweeps, all attachable to one main body, and with 6 irons, 21/-.

Additional Bottoms for same, with iron, 2/6 each.

Band Saws.

Best Quality Band Saws, Brazed, set and sharpened ready for use.

¼	⅜	½	⅝	¾	⅞	1	1⅛	1¼	1⅜	1½in. wide.
1/1	1/2	1/3	1/4	1/6	1/8	1/10	2/2	2/6	2/9	3/- per yd.

Portions of yards are charged as complete yards. Re-Brazing Bands, 9d. each.

Mortice Machine Chisels.

Best Solid Cast Steel Mortice Machine Chisels.

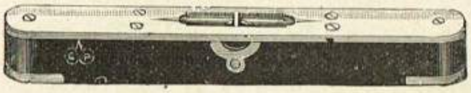
¼	5/16	⅜	7/16	½	9/16	⅝	11/16	¾	13/16	⅞	15/16	1in.
3/3	3/3	3/3	3/6	3/6	3/6	3/9	3/9	3/9	4/-	4/-	4/6	4/6 each.

Core Drifters same prices as Chisels.

Improved Self-Coring Mortice Machine Chisels :

¼	5/16	⅜	7/16	½	9/16	⅝	11/16	¾	13/16	⅞	15/16	1in.
8/-	8/-	8/6	9/-	9/6	10/-	10/6	11/-	11/6	12/-	12/6	13/-	13/6 each.

Spirit Levels.



1291c

No. 1291, on page 118, should be 3/6 each, not 2/9.
No. 1291c is the illustration that should have appeared on page 118.
Ebony Spirit Level, Tipped Bottom, with Brass Side Views, 8in., 2/3 ; 9in., 2/6 ; 10in., 2/9.

Steel and Iron.

(Nett and Carriage Forward.)

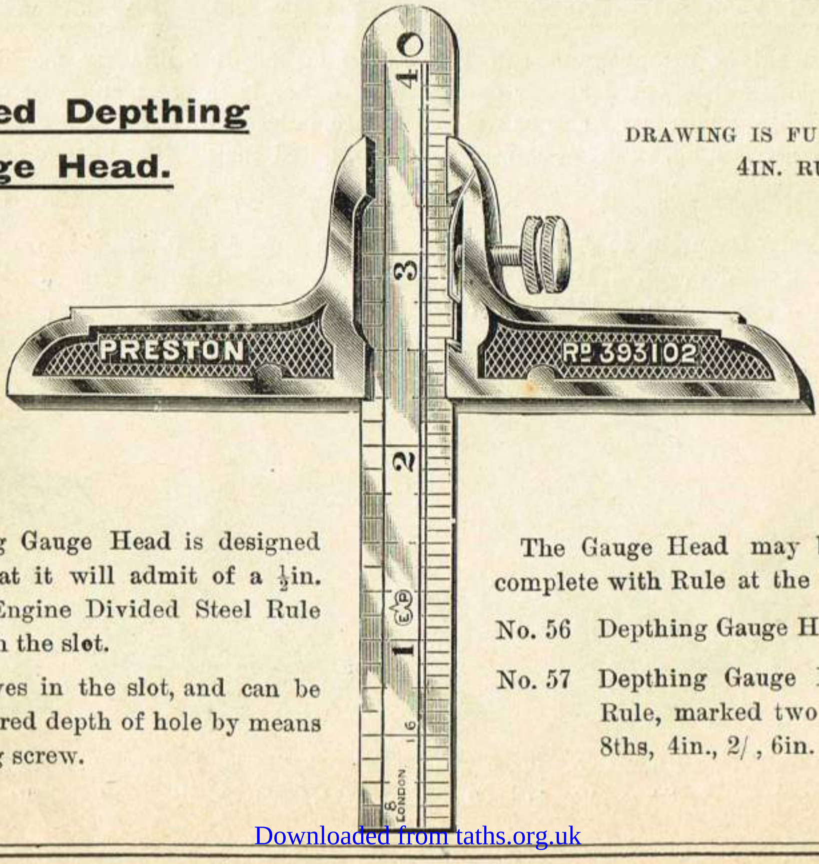
Superior Self-Hardening Steel, in 3ft. lengths.

	3/16	¼	5/16	⅜	7/16	½	⅝	¾in.
Prices for 3ft. lengths :	2/3	2/9	3/9	5/6	7/6	9/6	13/6	20/-

Best Cast Steel, 54/- cwt., 6d. per lb. for quantities less than ½cwt. Best Quality Bar Iron, 11/6 cwt.

Registered Depthing Gauge Head.

DRAWING IS FULL SIZE WITH 4IN. RULE.



Cast-iron.

Nickle-plated.

This Depthing Gauge Head is designed and made so that it will admit of a ½in. wide ordinary Engine Divided Steel Rule being inserted in the slot.

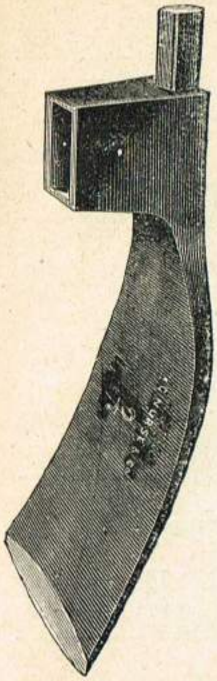
The Rule moves in the slot, and can be fixed to any desired depth of hole by means of the tightening screw.

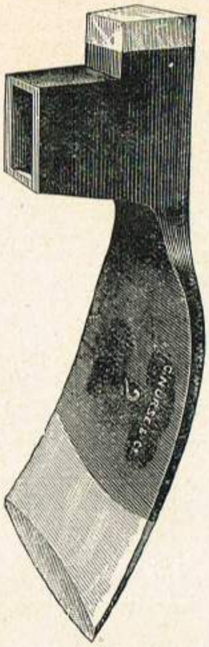
The Gauge Head may be had alone or complete with Rule at the following prices :

No. 56	Depthing Gauge Head only 1/6 each.
No. 57	Depthing Gauge Head, with Steel Rule, marked two edges, 16ths and 8ths, 4in., 2/ , 6in. 2/3.

PRICE LIST.

Adzes.


1 & 2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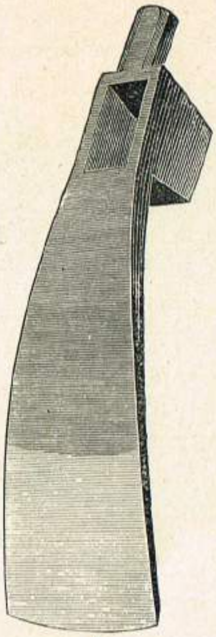
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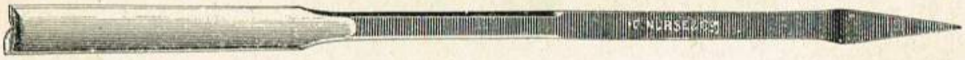
5

6

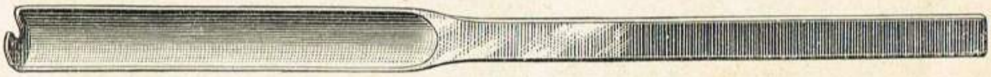
No.		Size Nos. 1	2	3
1	House Carpenters' Adzes	2/6	2/9	3/-
2	Best Joiners' Adzes	3/-	3/3	3/6
3	Best Wheelers' Adzes	3/6	4/-	4/3
4	Best Ship Carpenters' Adzes	3/6	4/-	4/3

5 & 6 Adze Handles, 10d. each.

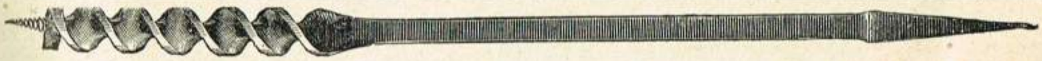
Augers.



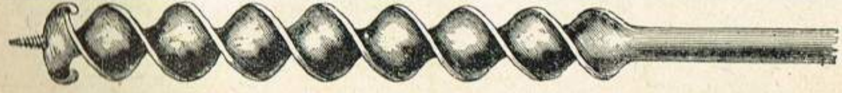
		$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$in.
7	Shell—Tanged	7d.	7d.	8d.	10d.	11d.	1/1	1/2	1/4	1/6	1/8

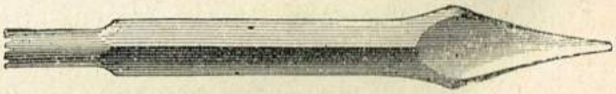


		$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$in.
8	Ditto Shipwrights' for Welding	8d.	8d.	9d.	11d.	1/-	1/2	1/4	1/6



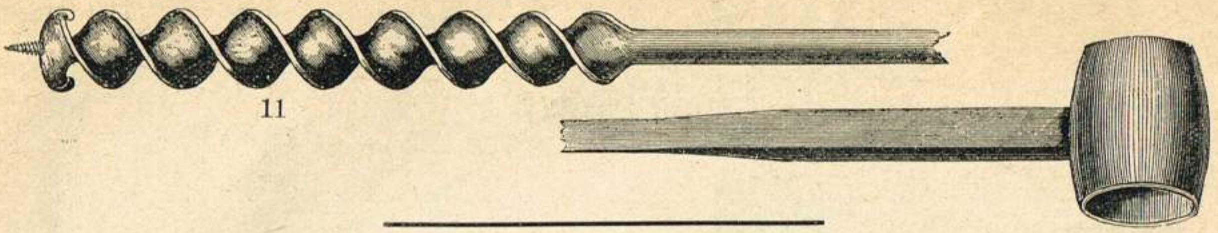
		$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$in.
9	Black Screw—Tanged	9d.	10d.	11d.	1/-	1/2	1/4	1/6	1/8	1/10	2/2





		$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2in.
10	Gedge's—Tanged	1/2	1/2	1/4	1/6	1/8	1/10	2/-	2/4	2/6	2/10	3/6	4/3

Augers—*continued.*



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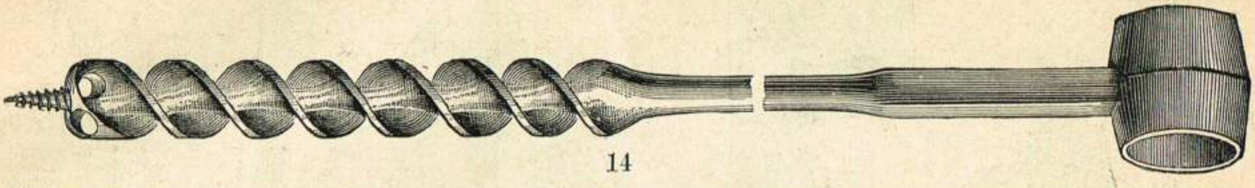
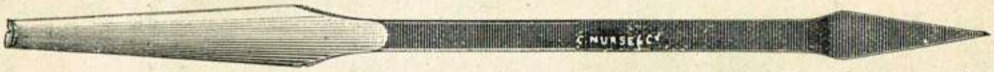


14

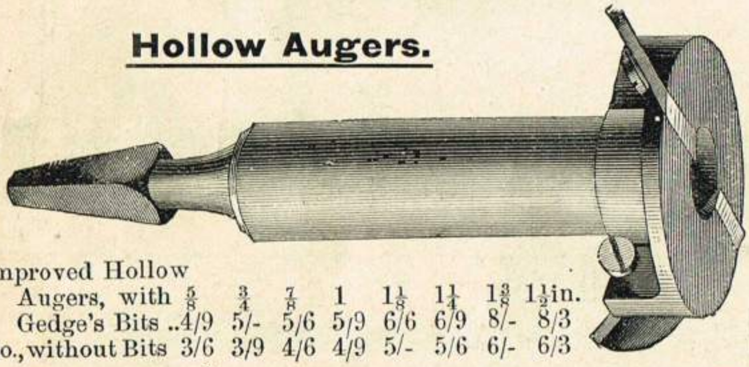
	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 3/4	2in.
11 Gedge's—Eyed ...	1/6	1/6	1/8	1/10	2/-	2/2	2/5	2/9	3/-	3/3	4/-	4/9
12 Long Bright Eyed Scotch	1/3	1/3	1/5	1/8	1/10	2/-	2/3	2/6	2/9	3/-	3/6	4/-
13 Solid Wing—Tanged	1/5	1/6	1/8	1/11	2/2	2/5	2/8	3/1	3/4	3/9	4/6	5/3
14 Ditto —Eyed	1/8	1/9	2/-	2/4	2/7	2/10	3/3	3/9	4/-	4/6	5/3	6/-



15

	1	1 1/4	1 1/2	1 3/4	2in.
15 Taper Shell, or Ladder Augers—Tanged	1/6	2/-	2/6	3/-	3/6

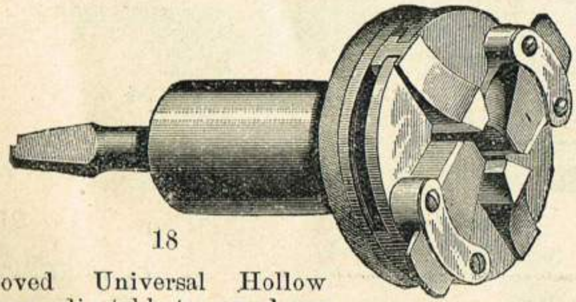
Hollow Augers.



16 & 17

	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2in.
16 Improved Hollow Augers, with Gedge's Bits ..	4/9	5/-	5/6	5/9	6/6	6/9	8/-	8/3
17 Do., without Bits	3/6	3/9	4/6	4/9	5/-	5/6	6/-	6/3

Universal Hollow Auger.

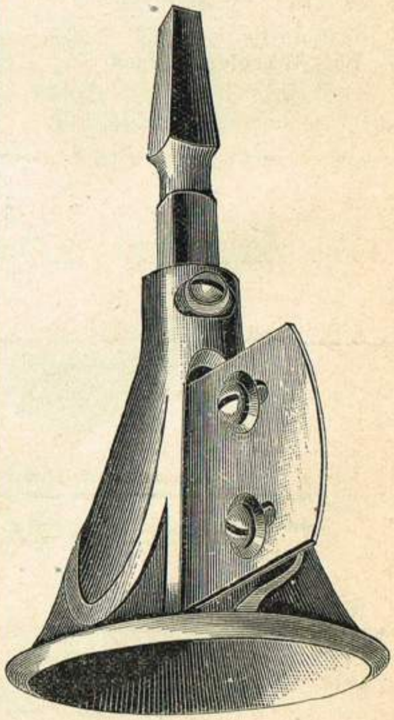


18

18 Improved Universal Hollow Auger, adjustable to round any size spoke from 3/8in. to 1 1/2in. Fitted with Improved Depth Gauge, 21/6.

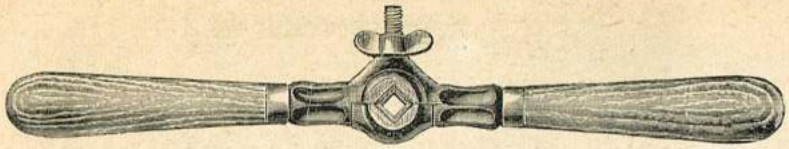
DIRECTIONS FOR USE OF HOLLOW AUGER.—Grind off the end of the cutter so that the line will be at the point. To set the cutters, put in a piece of round iron and hold it firm with the jaws, then put in the cutters so they will touch the iron, and then fasten. To cut large tenons, remove one of the cutters if needful. Extra cutters, 2/- per pair.

Spoke Trimmers.



19 Improved Spoke Trimmers, for rounding the ends of spokes before using the Hollow Auger, price 2/3.

Auger Handles.

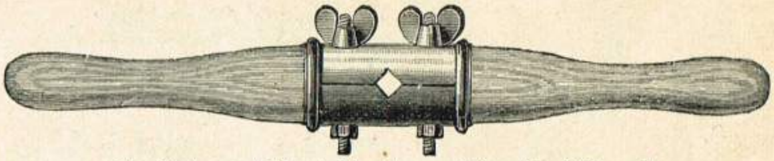


The main body of this is made of Malleable Iron with polished Ash Handles at the ends. Length, 16in. Weight, 21oz.

20 Improved Adjustable Auger Handle, 1/9 each.

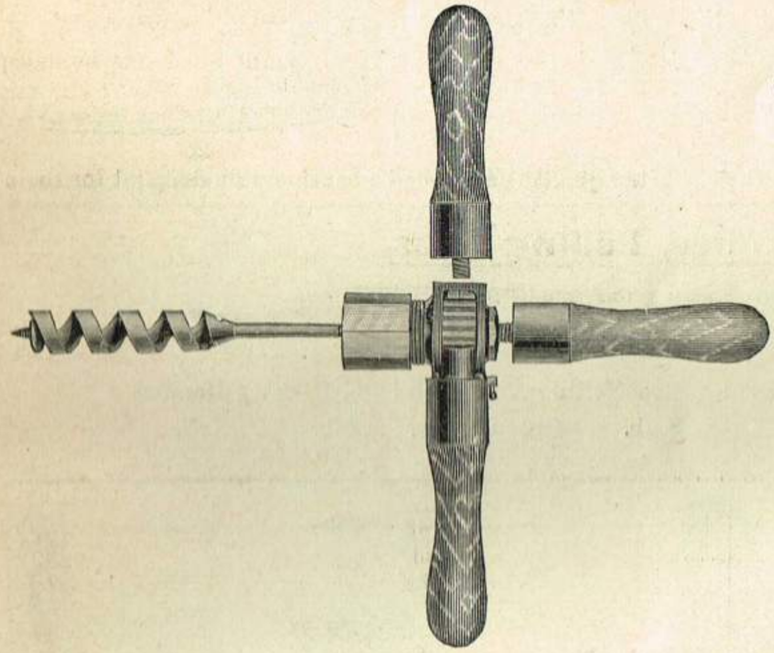
Patent Adjustable Auger Handle.

This Handle is fitted with a Steel Band 3in. long by $\frac{3}{16}$in. thick, which is cut lengthwise into two equal sections, which are operated by the two steel screws with thumb nuts, as seen in the illustration. Length, 17in. Price 2/3.



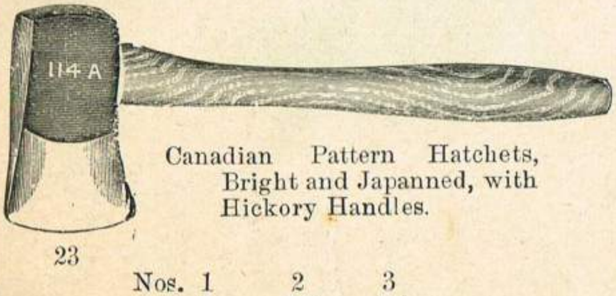
21 Patent Adjustable Auger Handle, 2/3 each.

Pratt's Ratchet Auger Handle.



22 The chuck of this Ratchet Auger Handle will hold almost every size of Auger and Bit Shanks in the Market. It can be made fixed so as to be used like a common auger handle, or by putting on the ratchet it can be used with both handles, but without shifting the hands. In cramped places, one handle is taken off and placed at a right angle with the other, as seen in the cut. The wood on the detachable handle revolves. The metal part of the handle is polished and nickel plated. What the ratchet bit brace is to the common brace, we think the Ratchet Auger Handle will be to those heretofore in use. It also answers the purpose of a ratchet drill. Price 8/6 each.

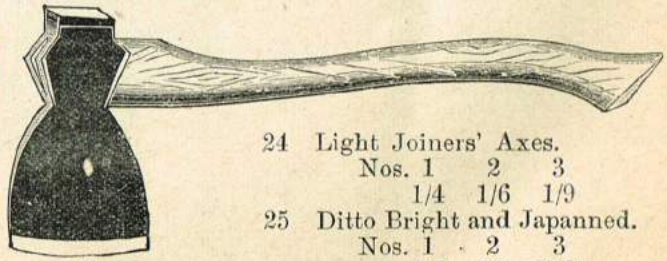
Axes.



Canadian Pattern Hatchets, Bright and Japanned, with Hickory Handles.

23

Nos.	1	2	3
	2/-	2/3	2/6



24

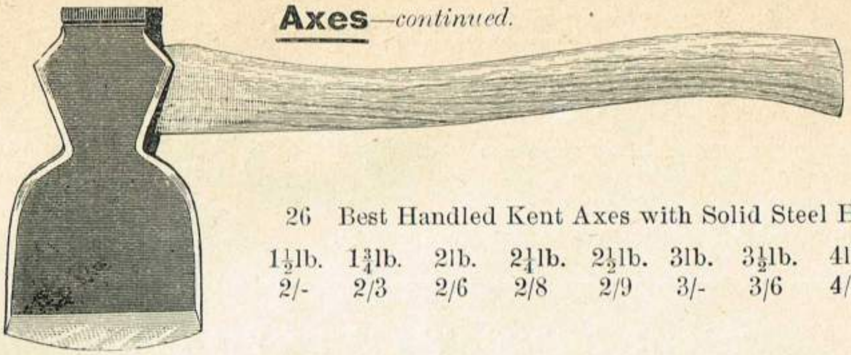
24 Light Joiners' Axes.

Nos.	1	2	3
	1/4	1/6	1/9

25 Ditto Bright and Japanned.

Nos.	1	2	3
	1/9	2/-	2/3

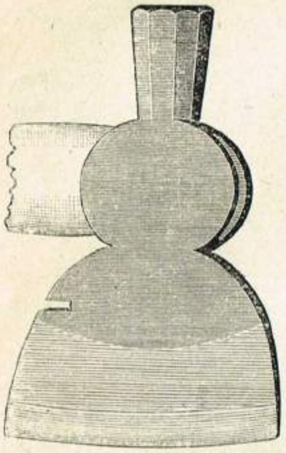
Axes—*continued.*



26 Best Handled Kent Axes with Solid Steel Heads.

1½lb.	1¾lb.	2lb.	2¼lb.	2½lb.	3lb.	3½lb.	4lb.	5lb.
2/-	2/3	2/6	2/8	2/9	3/-	3/6	4/-	5/- each.

Best Quality American Axes.



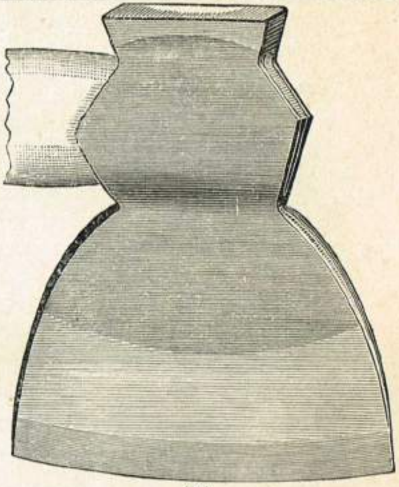
27

27 American Shingling Hatchets, 12in. Handles,

No. 1, 2/- No. 2, 2/3 No. 3, 2/6 each.

28 American Side Axes, 13in. Handles,

No. 1, 2/9 No. 2, 3/- No. 3, 3/3
No. 4, 3/9 each.



28

These are beautifully-made goods, and their sterling quality has created a considerable demand for them

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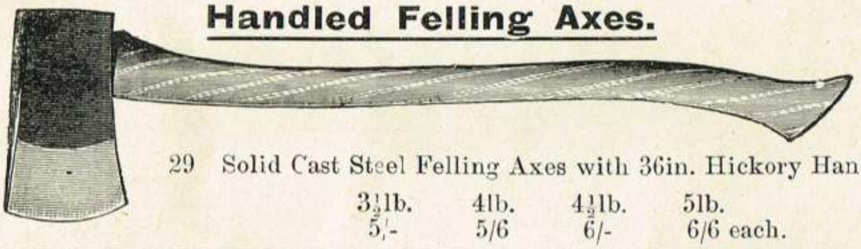
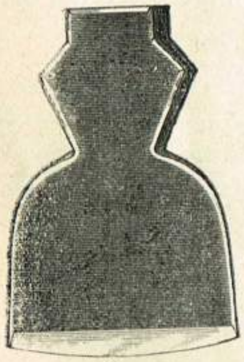
Handled Felling Axes.

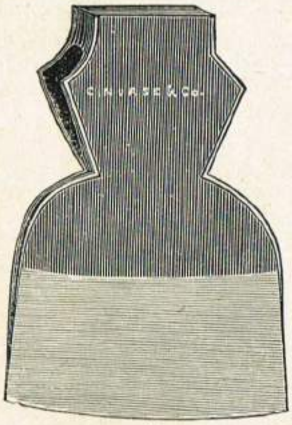


29 Solid Cast Steel Felling Axes with 36in. Hickory Handles.

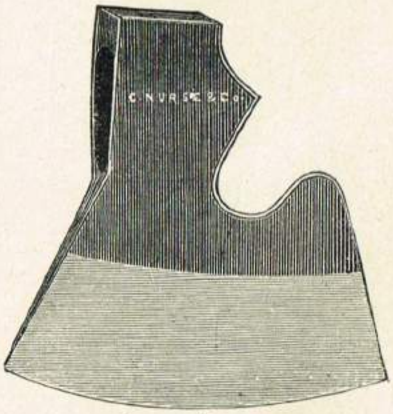
3½lb.	4lb.	4½lb.	5lb.
5/-	5/6	6/-	6/6 each.



30



31



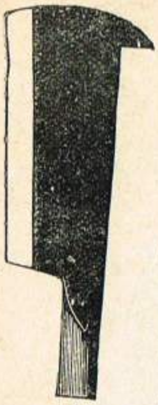
32

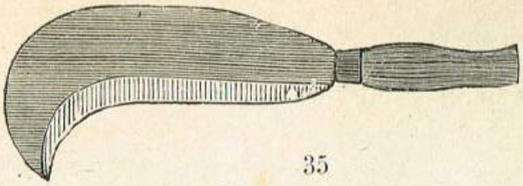
33

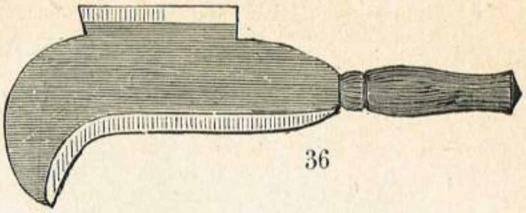
No.		1½	2	2½	3	3½	4	4½	5	6lb.
30	Best Solid Steel Kent Axe Heads	1/6	1/10	2/-	2/6	3/-	3/4	3/9	4/3	—
31	Best London Wheelers' Axe Heads	—	—	—	3/-	3/6	4/-	4/6	5/-	6/-
32	Best London Coachmakers' Axe Heads	—	—	—	3/-	3/6	4/-	4/6	5/-	6/-

33 Axe Handles, Bent Hickory, 15in. 3½d., 16in. 4d., 18in. 4½d., 20in. 5½d., 22in. 6½d., 24in. 7½d., 26in. 9d., 36in. 1/- each.

Woodcutters' Block Bills, etc.—*continued.*


34


35


36

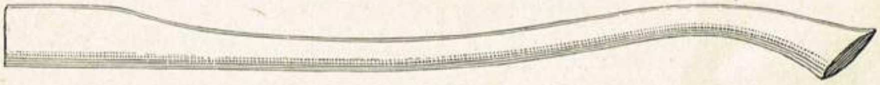
34 London Woodcutters' Block Bill with Socket Handle. Without Spike at back, 1/6. With Spike, as illustration, 2/-.
35 Single Edged Bill Hooks, 2/- each.
36 Double Edged Bill Hooks, 2/-, 2/3, 2/6 each.
37 Steel Timber Splitting Wedges, 6 by 1¾, 1/4 ; 7 by 1¾, 1/8 ; 8 by 2, 2/- each.

37

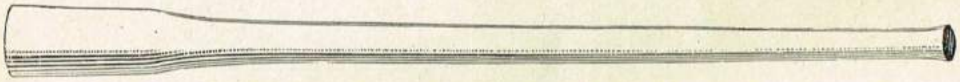
Best Pick Axes and Mattocks.

38 C. S. Pickaxes. To 6lb. 2/6, 7lb. 2/9, 8lb. 3/-, each.
39 C. S. Mattocks. To 6lb. 2/6, 7lb. 2/9, 8lb. 3/-, each.

Axe Handles.



40 Best Felling Axe Handles, 36in. 1/- each.

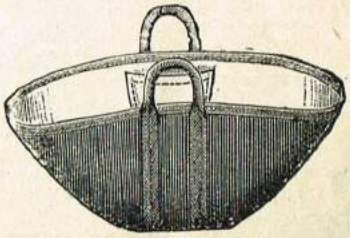


41 Pickaxe Handles, 36in. 8d., 39in. 10d., 42in. 1/- each.

Carpenters' Tool Baskets.

SUPERIOR QUALITY.

42


43.

Carpenters' Bound Tool Baskets, lined with Stout Sailcloth.

Nos. ...	1	2	3	4	5	6	
Size about	23	27	30	33	36	39	in.
Price ...	1/-	1/2	1/4	1/6	1/9	2/-	each.

Superior Hardwear Tool Basket, made of Strong Brown Canvas, with White Sailcloth Lining and Cocoa Binding.

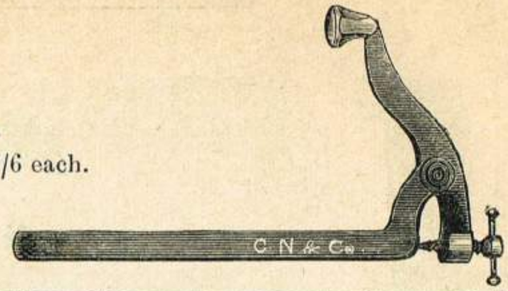
Nos. ...	1	2	3	4	5	6	
Size about	23	26	29	31	34	36	in.
Price ...	1/3	1/6	1/9	2/-	2/3	2/9	each

These Baskets are made expressly for us, and the Canvas Linings are of extra quality and strength, and will be found much superior to those generally sold.

Bench Holdfasts.

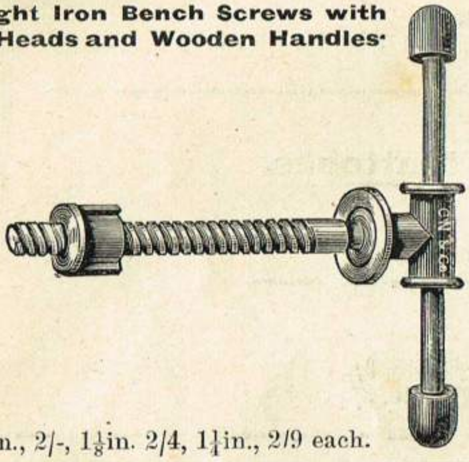
44 Best Black Bench Holdfasts—

12in. by ⅞in., 4/6 ; 14in. by 1in., 5/-,
16in. by 1⅛in., 6/- ; 18in. by 1¼in., 7/6 each.



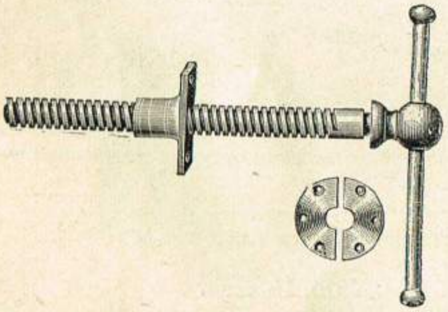
Bench Screws, Carvers' Screws, and Hand Screws.

Wrought Iron Bench Screws with Cast Heads and Wooden Handles·



45 1in., 2/-, 1⅛in. 2/4, 1¼in., 2/9 each.

Best Quality Iron Bench Screws.

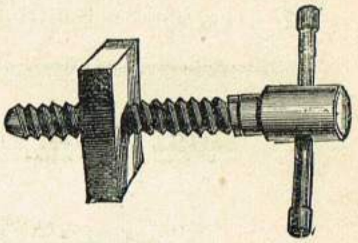


46 Best Quality Iron Bench Screws, with Black Heads and Handles—
15in. by 1in., 4/6, 18in. by 1⅛in., 5/6,
20in. by 1¼in., 6/6, 21in. by 1⅜in.. 9/- each.

47 Best Quality All Bright Bench Screws—
15in. by 1in., 5/3, 18in. by 1⅛in., 6/6,
20in. by 1¼in., 7/6, 21in. by 1⅜in., 10/6 each.

48 Best Quality Small All Bright Bench Screws—
6in. by $\frac{9}{16}$in., 2/6, 8in. by ⅝in., 3/-,
10in. by ¾in., 3/6, 12 by ⅞in., 4/3 each.

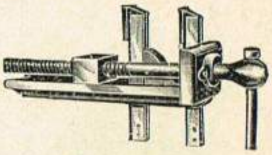
Best Quality Wood Bench Screws.



49 2in., 1/4, 2½in., 1/6 each.
Beech Bench Chops, Complete with 2 Bench Screws, 2in., 7/-, 2½in., 10/- each.

Bench Screw.

50 Wrought Iron Screw, Handle, and Jaws, with MalleableIron Body and Nut—

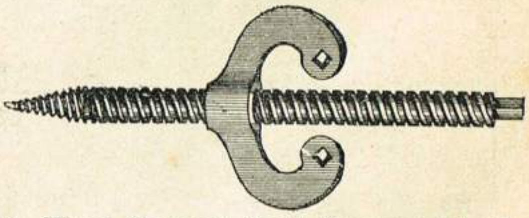


Price, 25/6.

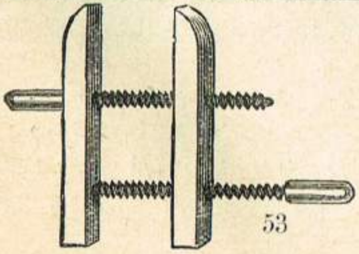
The pair of Jaws are fitted with Steel Springs.

This Pattern is supplied with two Cast Iron Sliding Plates.

Carvers' Screws.



51 Wood Carvers' Steel Screws with Large Malleable Fly Nuts—
8in. by ½in., 3/-, 10in. by ⅝in., 3/6 each.



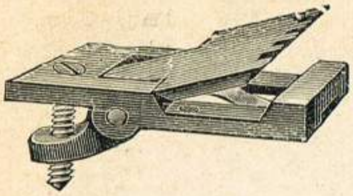
53

52 Boxmakers' Beech Bench Screws, 1/8 each.

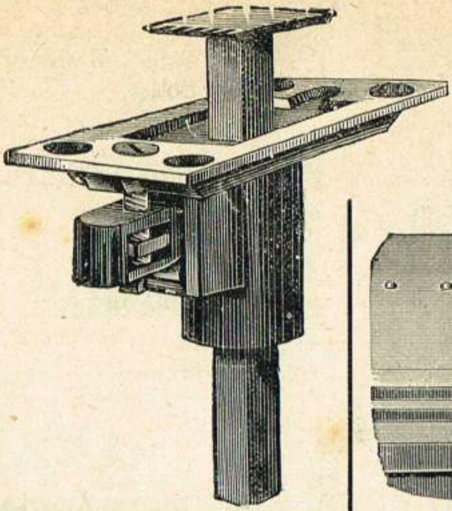
53 Beechwood Hand Screws—

6	8	10	12	14	16in.
8d.	9d.	11d.	1/1	1/3	1/5 each.

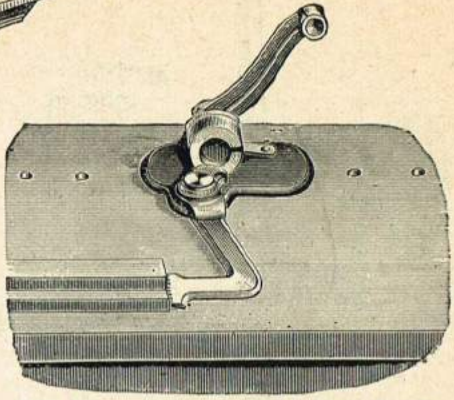
Bench Stops.



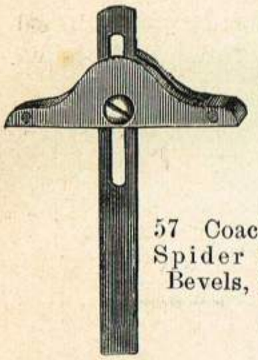
54 Improved Iron Bench Stop, 11d. each.



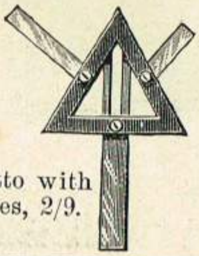
55 Morrill's Perfect Bench Stops, No. 1, 2/3, No. 2, 3/-.



56 Joiners' Improved Bench Knife Stop, 2/6 each.

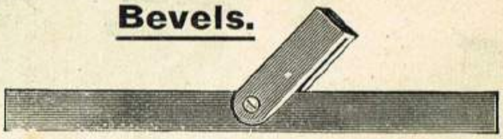


57 Coachmakers' Spider Mortice Bevels, 2/- each.



58 Ditto with 3 blades, 2/9.

Bevels.



59 Coachmakers' Steel T Bevels, 12in. blades, 2/6 each.

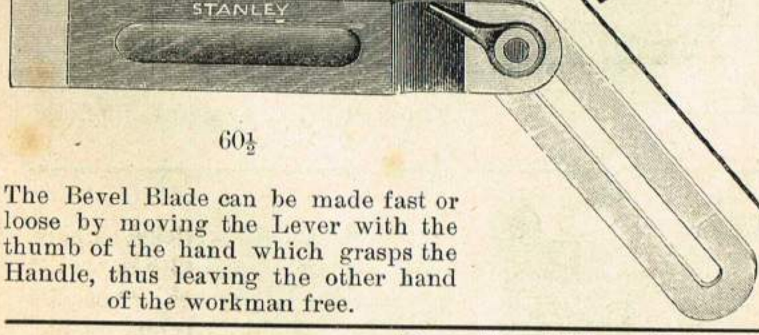
60 Improved Ditto, with Brass Bush, 3/- each.

Stanley Bevels.

Rosewood Handles, with Brass Lever (Flush).

60½

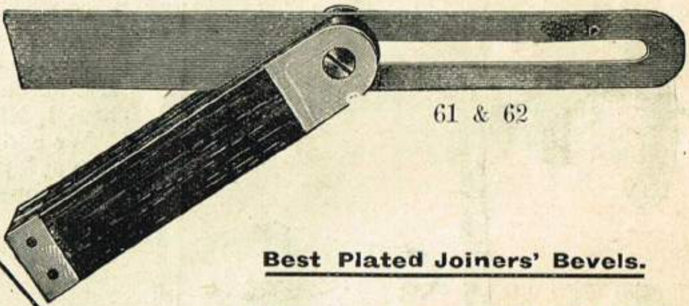
8 inch... 1/4 each
10 inch... 1/8 „
12 inch... 2/- „



60½

The Bevel Blade can be made fast or loose by moving the Lever with the thumb of the hand which grasps the Handle, thus leaving the other hand of the workman free.

Sliding T Bevels.



61 & 62

Best Plated Joiners' Bevels.

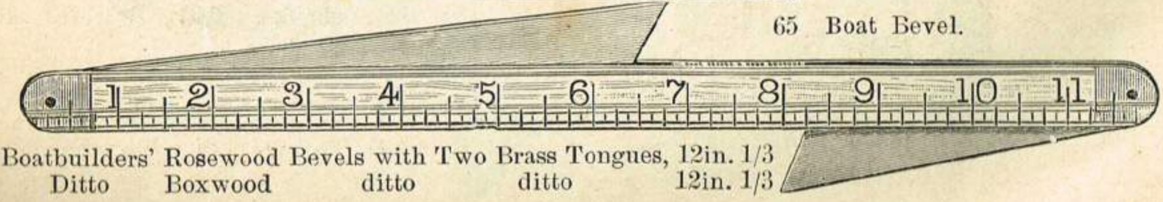
61 Improved Rosewood Sliding Bevels, 7½in. 2/-, 9in. 2/3, 10½in. 2/6, 12in. 2/9.

62 Ditto, Ebony, 7½in. 2/2, 9in. 2/4, 10½in. 2/7, 12in. 2/10.

63 Ditto, Brass Framed Inlaid with Ebony, 7½in. 3/2, 9in. 3/6, 10½in. 3/9, 12in. 4/- each.

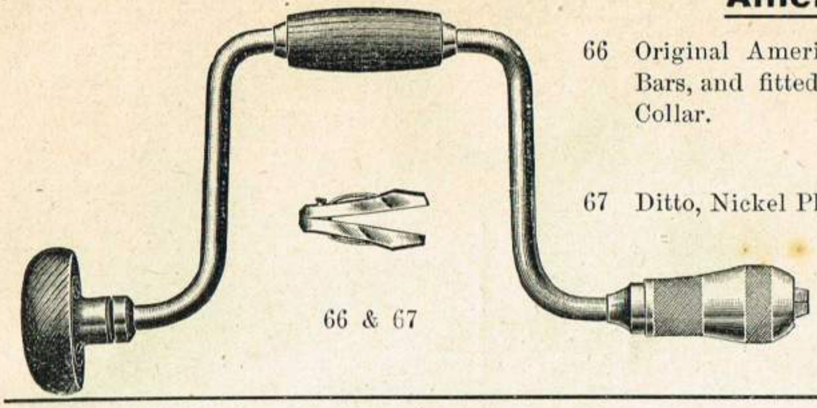
Boatbuilders' Bevels.

65 Boat Bevel.



64 Boatbuilders' Rosewood Bevels with Two Brass Tongues,				12in. 1/3
65 Ditto	Boxwood	ditto	ditto	12in. 1/3

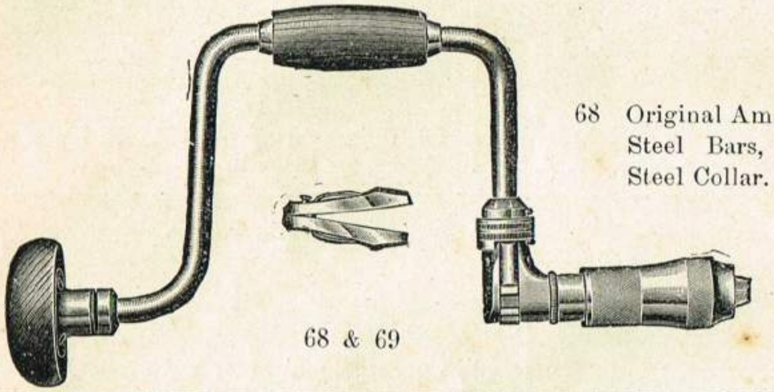
American Braces.



66 & 67

66 Original American-made Braces, Polished Steel Bars, and fitted with our New Anti-friction Steel Collar.

	8	10	12in. sweep.
66	2/-	2/3	2/6 each.
67 Ditto, Nickel Plated,	2/6	2/9	3/3 each.



68 & 69

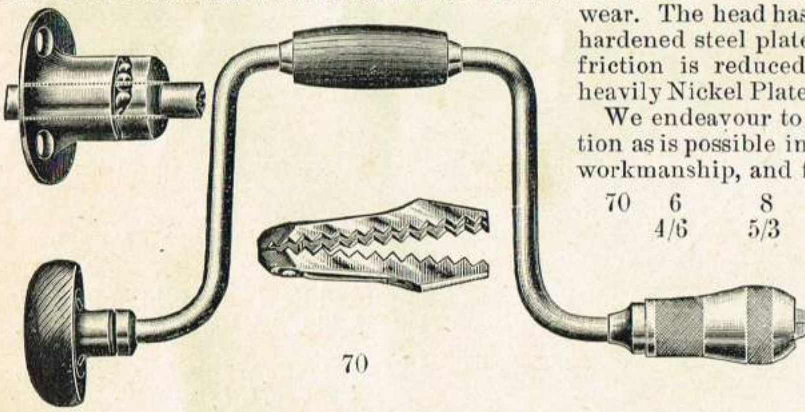
68 Original American-made Ratchet Braces, Polished Steel Bars, and fitted with New Anti-friction Steel Collar.

	8	10in. sweep.
68	4/-	4/3 each.
69 Ditto, Nickel Plated ...	4/6	5/- each.

Improved Braces.

These Braces possess the following points of superiority: The Sweep is made from Steel. The Jaws are forged from Steel. The Wood Handle has brass rings inserted in each end so it cannot split off. The Chuck has a hardened Steel Anti-friction washer between the two sockets, thus reducing the wear. The head has a bearing of steel balls, running on hardened steel plates, so no wear can take place, as the friction is reduced to the minimum. The Brace is heavily Nickel Plated and Warranted in every particular.

We endeavour to make these goods as nearly perfection as is possible in durability, quality of material and workmanship, and fineness and beauty of finish.

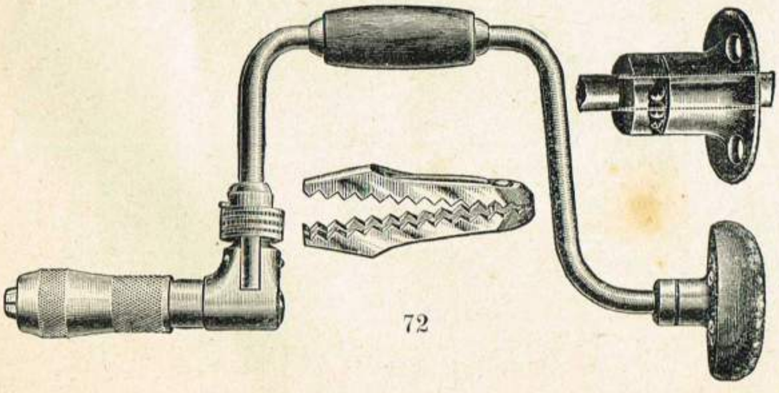


70

	6	8	10	12	14in. sweep.
70	4/6	5/3	6/-	6/6	7/- each.

71 Ditto, with 4in. sweep and Special Chuck for Pianoforte Makers' use, 4/6 each.

N.B.—The "Sweep" of a Brace is the diameter of the circle produced by a revolution of the Brace.

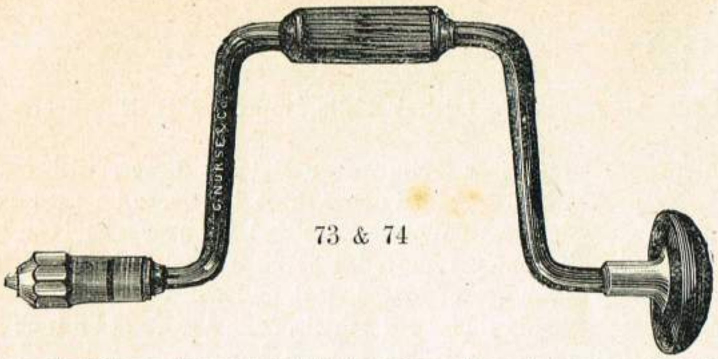


72

72 Best Quality Nickel Plated Ratchet Braces with improved covered Ratchet, Crocodile Jaws, holding round shanks equally as well as square shanks, Ball Bearings to head.

6	8	10	12	14in. sweep.
6/6	7/-	7/6	8/-	9/- each.

Best Quality English-made Braces.



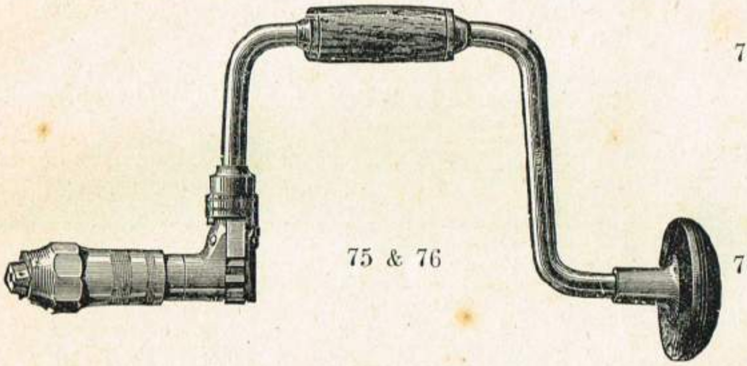
73 & 74

73 Improved English-made American Pattern Brace, with Octagon Mouthpiece, Spring Jaws, and Bright Steel Bar.

5in.	8in.	10in.	12in. sweep.
2/-	2/3	2/6	3/- each.

74 Ditto, Nickel Plated.

2/9	3/-	3/3	3/9 each.



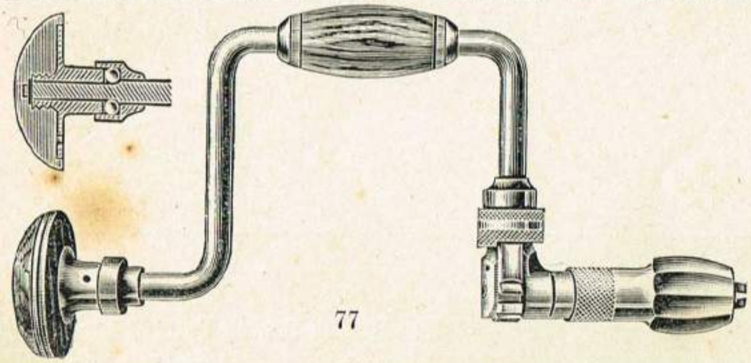
75 & 76

75 Improved English-made American Pattern Ratchet Brace, with Octagon Mouthpiece, Spring Jaws, and Bright Steel Bar.

8in.	10in.	12in. sweep.
4/3	4/6	5/6 each.

76 Ditto, Nickel Plated.

5/-	5/3	6/6 each.

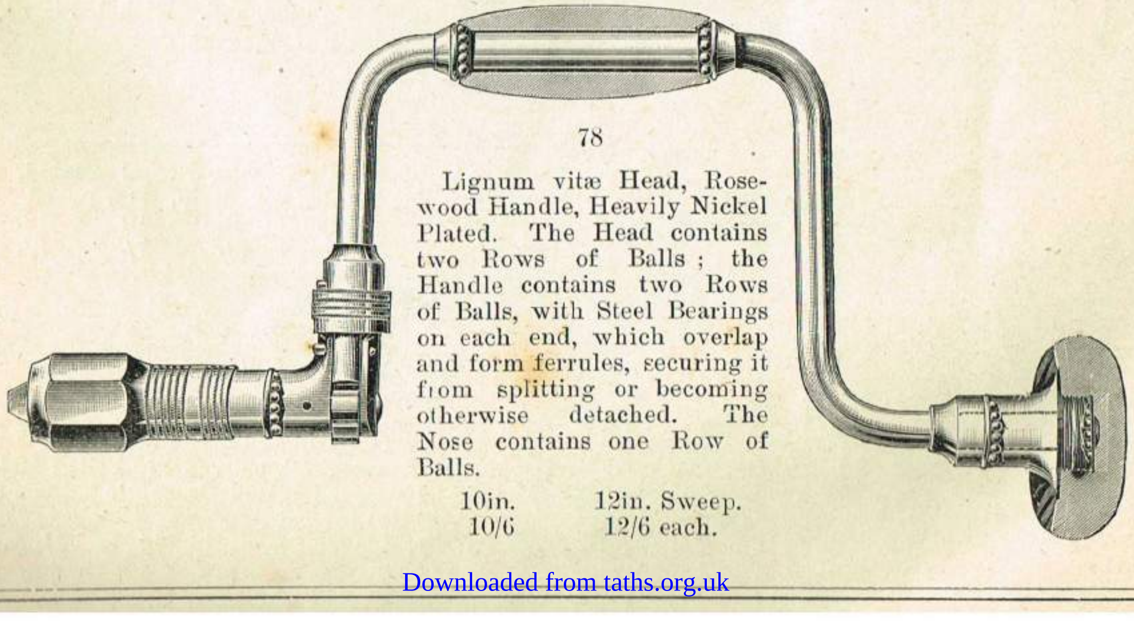


77

77 Best Quality English-made American Pattern Ratchet Brace, Rosewood Head and Handle, Sweep and Jaws Steel, Ball Bearing Head, Sweep and Jaws Heavily Nickel Plated.

8in.	10in.	12in. sweep.
6/6	7/-	7/6 each.

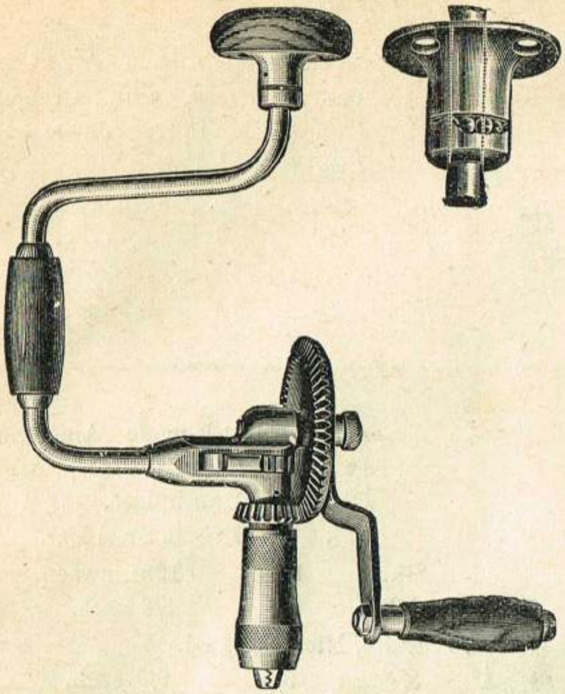
Improved Ratchet Braces, with Ball Bearings Throughout.



78

Lignum vitæ Head, Rosewood Handle, Heavily Nickel Plated. The Head contains two Rows of Balls; the Handle contains two Rows of Balls, with Steel Bearings on each end, which overlap and form ferrules, securing it from splitting or becoming otherwise detached. The Nose contains one Row of Balls.

10in.	12in. Sweep.
10/6	12/6 each.



79 Miller's Falls Improved Drill Brace.

This is a 10in. sweep Ratchet Brace, with gear wheels speeded about three to one, to be used for drilling. When not needed, the gear wheel can be instantly removed, leaving a ratchet brace. The jaws are of forged steel, and will centre and hold firmly round twist drills, from $\frac{1}{8}$ to $\frac{7}{16}$ of an inch in diameter. The brace is made of steel, and is heavily nickel plated, with rosewood handle and cocobola head.

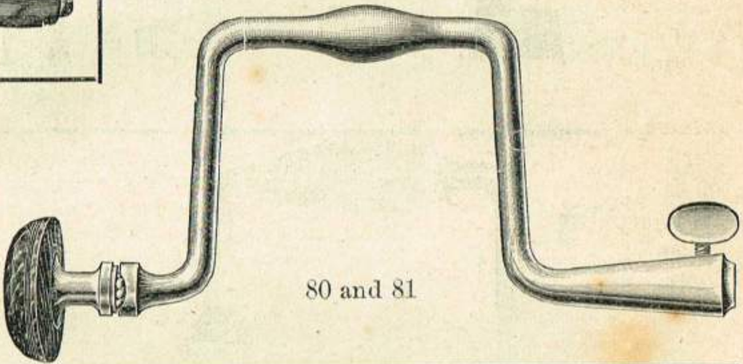
Price of Drill Brace complete, 12/6 each.

80 Waggon Builders' Improved Brace with Lignum Head and Ball Bearings.

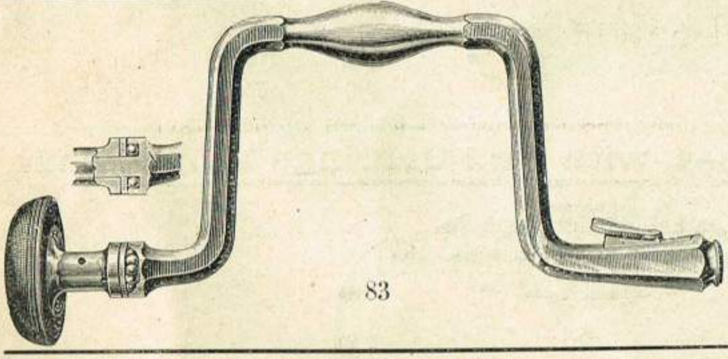
12	14	16in. sweep.
5/6	6/-	6/6 each.

81 Ditto, Nickel Plated.

12	14	16in. sweep.
6/6	7/3	8/- each.



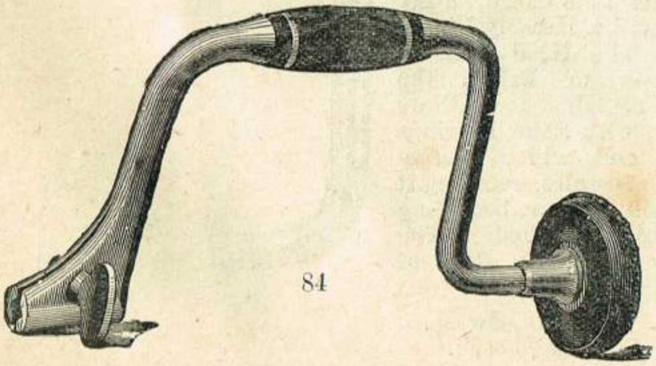
80 and 81



83

82 Strong Scotch Pattern Braces, 4/6.

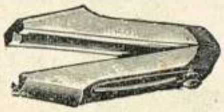
83 Best Quality Forged Steel Ditto, Extra Strong, with Ball Bearings, 8/6. Nickel Plated, 10/- each.



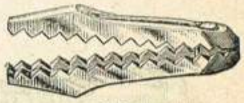
84

84 Spofford's Braces, Nickel Plated, with Thumbscrew Grip, Hardwood Head and Handle

8	10	12in.
6/-	7/-	8/- each.



85



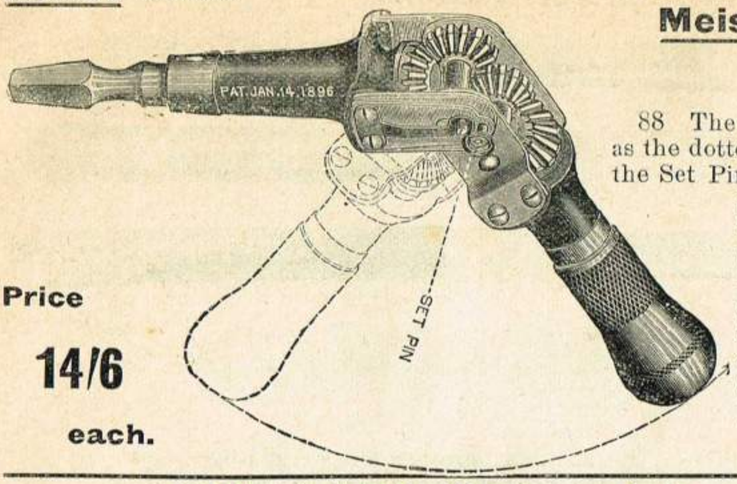
86

85 Steel Spring Jaws for American Pattern Braces, 8d. pair. Ditto Plated 10d.

86 Improved Plated Crocodile pattern ditto, 1/3 per pair.

87 Heads for Braces, 4d., 6d., and 1/- each.

Meister's Angular Boring Machine.



Price

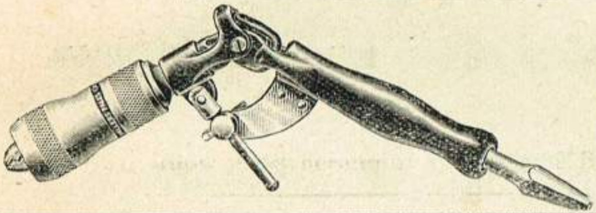
14/6

each.

88 The Chuck part of this machine bends as far as the dotted lines show, and is locked firmly with the Set Pin at the desired angle. The gearings are turned out of bar steel, and teeth cut. Shaftings and side plates are of Bessemer Steel, and the castings are Malleable Iron. All parts are turned and fitted to run perfectly truly. The tool has a fine appearance, and is strongly made. Bores at any angle, and all sizes of holes with ease.

Price originally was 21/- each, but is now reduced to **14/6.**

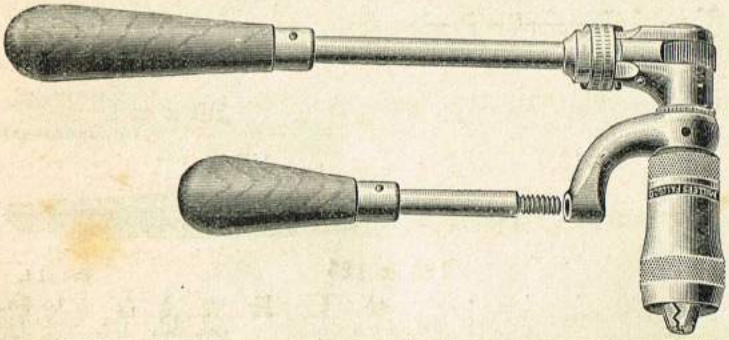
Miller's Falls Improved Angular Bit Stock.



89 This is an improvement on the original pattern, which it takes the place of. The crocodile pattern jaws are now supplied in place of the plain jaws, and the angular adjustment is simplified and strengthened.

Price **6/3** each.

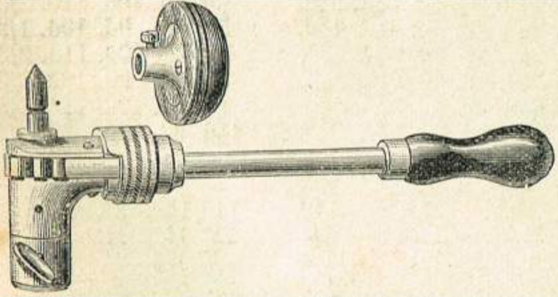
Miller's Falls New Pattern Corner Brace.



90 This tool is provided with a Right and Left Hand Ratchet arrangement, making it a very useful tool for boring holes in corners, or any confined spaces, where the full sweep of a brace could not be used. It is fitted with the crocodile pattern jaws, and is both a very useful and nicely finished article.

Price **6/6** each.

Handy Ratchet Brace.



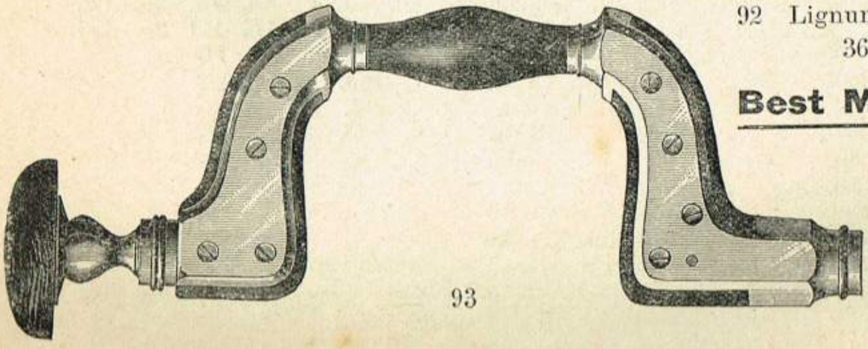
91 Can be used also as an Engineer's Ratchet Brace for holes up to ½in.

10in. long, Bright, **5/-**; Nickel Plated, **6/-** each.

Improved Plated Beech Brace.

92 Lignum Head, **9/-**; Ditto, Fitted with 36 Best Bright Bits, **23/-**.

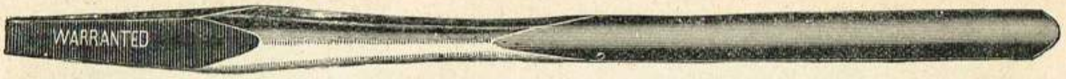
Best Metallic Framed Ebony Brace.

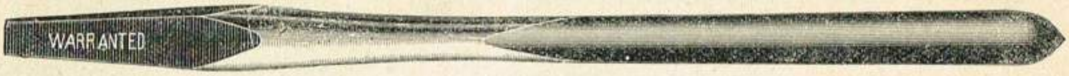


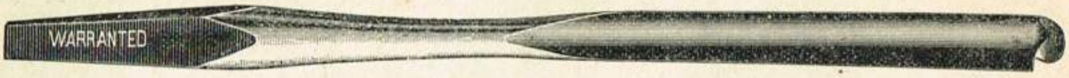
93

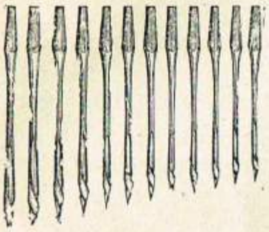
93 Fitted with set of 36 Best Straw Colour Brace Bits, **31/6.**

Brace Bits.—*Continued.*


94 & 95


96 & 97


98 & 99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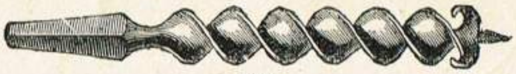
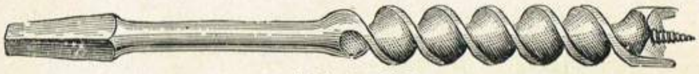
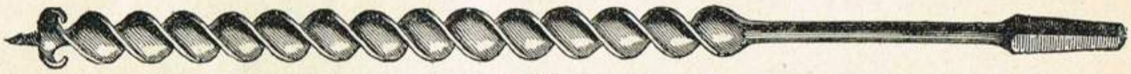

103


104 & 105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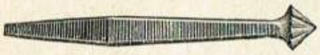
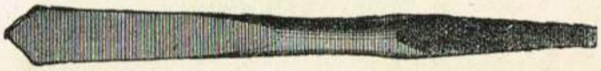

111 & 112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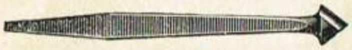
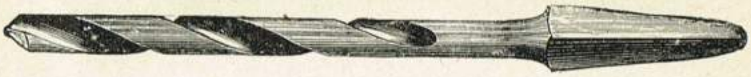

113 & 114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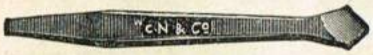
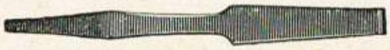
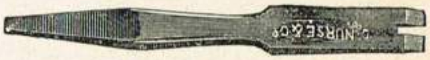
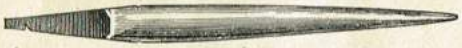
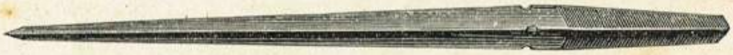

115 & 116


117 & 118


120 & 121


122 & 123


124 & 125

No.		1/16	3/32	1/8	5/32	3/16	7/32	1/4	9/32	5/16	11/32	3/8	13/32	7/16	1/2	9/16	5/8	Set of 6. to ¾in.
94	Black Shell Bits ...	3½d.	3½d.	3½d.	3½d.	3½d	3½d.	3½d.	4d.	4d.	4½d.	4½d.		5d.	6d.	9d.	10d.	1/9
95	Straw Colour ditto ...	4½d.	4½d.	4½d.	4½d.	4½d.	4½d.	4½d.	5d.	5d.	5½d.	5½d.		6d.	7d.	10d.	11d.	2/3
96	Black Spoon Bits ...	3½d.	3½d.	3½d.	3½d.	3½d.	3½d.	3½d.	4d.	4d.	4½d.	4½d.		5d.	6d.	9d.	10d.	1/9
97	Straw Colour Ditto ...	4½d.	4½d.	4½d.	4½d.	4½d.	4½d.	4½d.	5d.	5d.	5½d.	5½d.		6d.	7d.	10d.	11d.	2/3
98	Black Nose Bits ...	3½d.	3½d.	3½d.	3½d.	3½d.	3½d.	3½d.	4d.	4d.	4½d.	4½d.		5d.	6d.	9d.	10d.	1/9
99	Straw Colour Ditto ...	4½d.	4½d.	4½d.	4½d.	4½d.	4½d.	4½d.	5d.	5d.	5½d.	5½d.		6d.	7d.	10d.	11d.	2/3
100	Half Twist or Diamond	2½d.	2½d.	2½d.	2½d.	2½d.	2½d.	2½d.	3d.	3d.	3½d.	3½d.	4½d.	4½d.	6d.	7d.	8d.	1/4
101	Bright C.S. Sash Bits			5d.		5d.		5d.		5½d.		6d.						
102	Bright Shell Gimlet Bits			4d.	4d.	4d.	4d.	4d.	5d.	5d.	6d.	6d.						
103	Gedge's Dowel Bits							11d.		11d.		11d.		11d.	11d.	1/-	1/1	
104	Jennings' Dowel Bits							1/-		1/-		1/-		1/-	1/-	1/2	1/4	
105	Russell Jennings' Original Ditto							1/1		1/4		1/4		1/8	1/8	2/-	2/-	
106	Gedge's Pattern Long Sash Bits											2/-		2/-	2/-	2/3	2/3	
107	Jennings' Sash Bits											2/6		2/9	2/9	3/-	3/-	
108	Russell Jennings' Original Ditto											2/9		3/-	3/6	4/-	4/6	
109	Brace Drill Bits			4d.	4d.	4d.	4d.	4d.	4d.	4d.	4d.	4d.	4d.	4d.	4d.	5d.	6d.	
110	American Bit Stock Drills	3d.	3½d.	4d.	5d.	6d.	7d.	9d.	10½d.	1/-	1/1½	1/3	1/4	1/6	1/9	2/-	2/6	

111	Black Rose Head Bits	½in. 4d.	9/16in. 5d.	⅝in. 6d.	¾in. 8d.	⅞in. 1/-
112	Straw Colour Ditto	„ 5½d.	„ 6½d.	„ 7½d.	„ 10d.	„ 1/2
113	Black Snail Horn Bits	„ 4d.	„ 5d.	„ 6d.	„ 8d.	„ 1/-
114	Straw Colour Ditto	„ 5½d.	„ 6½d.	„ 7½d.	„ 10d.	„ 1/2
115	Black Flat Head Bits	„ 4d.	„ 4½d.	„ 5d.	„ 7d.	„ 11d.
116	Straw Colour Ditto	„ 5d.	„ 5½d.	„ 6d.	„ 8d.	„ 1/-

117 Black Turnscrew Bits 3d. each. 118 Straw Colour Ditto 4d. each.

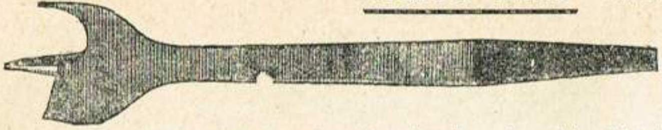
119 Bright Turnscrew Bits, best quality, 4in. 5d., 5in. 8d., 8in. 1/-

120 Forked Turnscrew Bits, Black, 3½d. each. 121 Forked Turnscrew Bits, Straw Colour, 4½d. each.

122 Half Round Rimers, Black, 4d. each. 123 Half Round Rimers, Straw Colour, 5d. each.

124 Square Rimers, Black, 4d. each. 125 Square Rimers, Straw Colour, 5d. each.

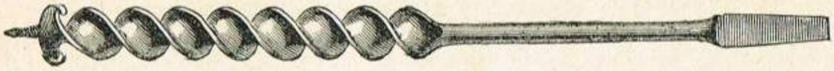
Brace Bits—*continued.*



126 & 127 Centre Bits.

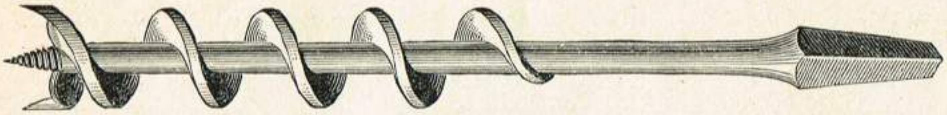
	$\frac{1}{8}, \frac{3}{16}$ or $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	Set of 12, $\frac{1}{4}$ to $1\frac{1}{2}$in.
126 Black Centre...	3d.	3d.	$3\frac{1}{2}$d.	4d.	4d.	$4\frac{1}{2}$d.	$4\frac{1}{2}$d.	$5\frac{1}{2}$d.	6d.	7d.	8d.	9d.	10d.	11d.	1/-	1/3	1/6	2/-	4/6
127 Straw Colour Do.	$4\frac{1}{2}$d.	$4\frac{1}{2}$d.	5d.	5d.	$5\frac{1}{2}$d.	$5\frac{1}{2}$d.	6d.	7d.	8d.	9d.	10d.	11d.	1/-	1/1	1/2	1/6	1/9	2/4	6/-

128



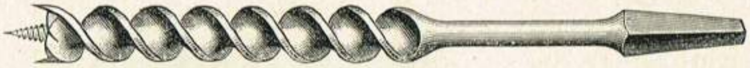
Gedge's Pattern Bits.

129



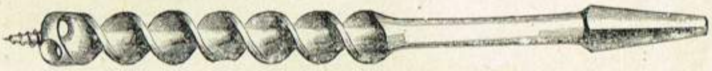
Irwin Auger Bit.

130 & 131

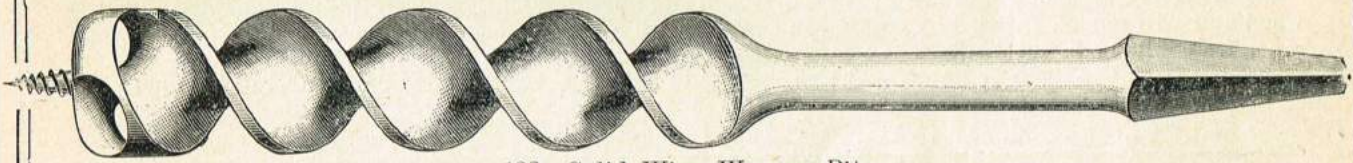


Jennings' Bits.

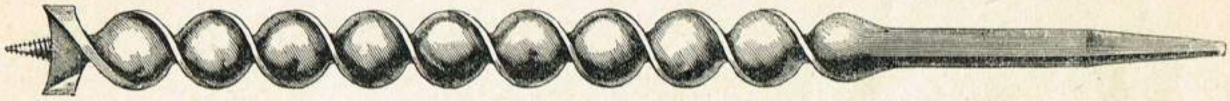
132



Solid Wing.



133 Solid Wing Waggon Bits.

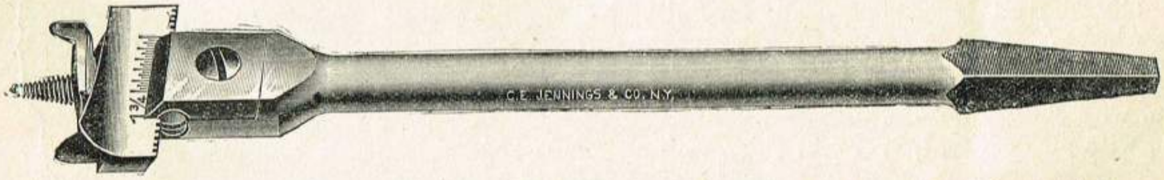


134 Leadbeater's Waggon Bits.

		$\frac{3}{16}$ or $\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	Set of 6, $\frac{3}{8}$ to 1in.
128	Gedge's Pattern	11d.	11d.	11d.	1/2	1/3	1/6	1/8	2/0	2/2	2/6	2/9	7/3
129	Irwin Auger Bits	9d.	11d.	1/-	1/2	1/5	1/9	2/-	2/9	3/-	3/3	3/6	8/-
130	Jennings' Pattern, warranted	1/1	1/3	1/3	1/5	1/7	1/9	2/-	2/3	2/6	3/-	3/6	9/-
131	Russell Jennings' Original ...	1/2	1/4	1/8	2/-	2/4	2/9	3/2	3/9	4/3	5/-	5/6	13/-
132	Solid Wing	11d.	11d.	11d.	1/2	1/3	1/6	1/8	2/-	2/2	2/6	2/9	7/3
133	Solid Wing Waggon Bits ...	—	1/4	1/4	1/6	1/8	1/10	2/-	2/4	2/6	3/-	3/3	9/6
134	Leadbeater's Waggon Bits ...	—	1/5	1/6	1/7	1/9	2/-	2/3	2/7	2/10	3/3	3/9	10/6

All Twist Bits in $\frac{1}{16}$ths, same prices as next larger size.

Steers Patent Expansion Bits.

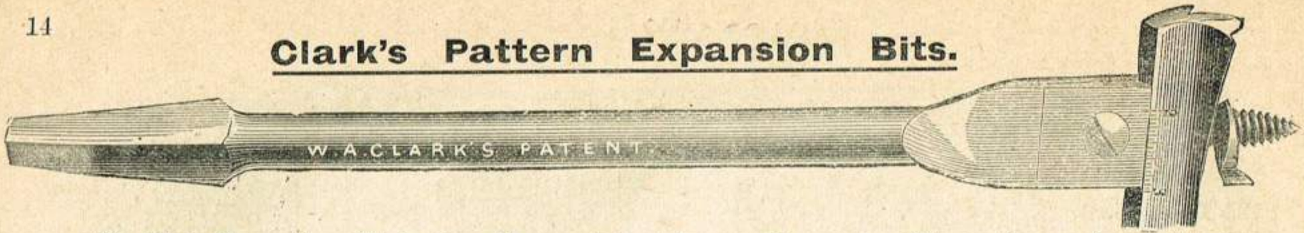


135 These Bits are drop-forged from selected Cast Steel and are finished in a most thorough manner. The cutter is most firmly held, and the screw adjustment is so made that whilst the Bit is most easily set to any desired size, when once set any creeping or expansion in working is rendered impossible. In this most important respect we consider it is superior to any other Expansion Bit in the market.

No. 1.	Cutting from	$\frac{5}{8}$in. to $1\frac{3}{4}$in.	6/3 each.
No. 2.	,,	$\frac{7}{8}$in. to 3in.	8/- ,,
No. 3.	,,	$\frac{7}{8}$in. to 4in.	12/- ,,

Extra Cutters for same, No. 1, $\frac{5}{8}$in. to $1\frac{1}{8}$in., 1/- ; No. 2, $1\frac{1}{8}$in. to $1\frac{3}{4}$in., 1/4 ; No. 3, $\frac{7}{8}$in. to $1\frac{3}{4}$in., 1/9 ; No. 4, $1\frac{3}{4}$in. to 3in., 2/-; No. 5, 3in. to 4in., 4/- each.

Clark's Pattern Expansion Bits.



136 This Expansion Bit is the oldest and best-known Expansion Bit on the market. It gives general satisfaction, and its moderate price creates a very large sale.

No. 1	Clark's Expansion Bit, cutting from $\frac{1}{2}$in. to $1\frac{1}{2}$in.	... ...	4/-
2	,, ,, ,, $\frac{7}{8}$ to 3	... ...	5/6
3	,, ,, ,, $\frac{7}{8}$ to 4	... ...	8/6
4	,, ,, ,, $\frac{7}{8}$ to 5	... ...	13/6

FOR NO. 1 BIT.

137 Cutters for ditto :—No. 1, Cutting from $\frac{1}{2}$in. to $\frac{7}{8}$in., 1/- ; No. 2, Do., $\frac{7}{8}$in. to $1\frac{1}{2}$in., 1/4.

FOR NO. 2 BIT.

,, ,, ,, No. 3, Cutting from $\frac{7}{8}$in. to $1\frac{3}{4}$in., 1/9 ; No. 4, Do., $1\frac{3}{4}$in. to 3in., 2/- ; No. 5, Do., 3in. to 4in., 3/- ; No. 6, Do., 4in. to 5in., 5/.

Bit Stock Drills. (For Wood.)

138 These are made of the best material, forged and not milled. They are especially adapted to hard wood and will not be injured by coming in contact with a nail or screw, and, having a longer point, cut much faster than a metal drill. They bore a smooth hole in any direction, and will not split the wood nor turn aside from the grain or knots. Their speed and feed are entirely under the control of the operator.

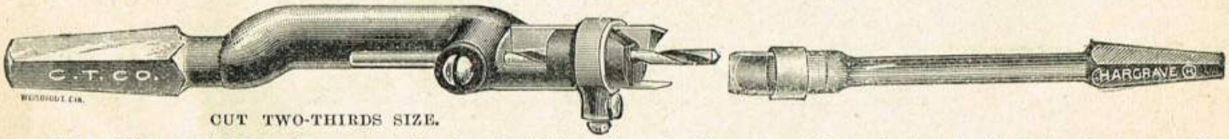
$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{11}{32}$	$\frac{3}{8}$	$\frac{13}{32}$	$\frac{7}{16}$	$\frac{15}{32}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$in.
5d.	6d.	7d.	8d.	10d.	11d.	1/-	1/2	1/3	1/4	1/6	1/8	1/9	2/-	2/6	3/3 each.

Bell Hangers' and Electricians' Drills.

139 This Bit is made particularly for bell hangers, car builders, electricians, telephone and telegraph work. It is made of the best refined steel, will not be injured by coming in contact with a nail or screw, and will go through plastering and brick walls. It can be easily sharpened on an emery wheel or grindstone, and is the most durable, and therefore the cheapest Bit in the market. We make it in the following lengths and sizes :—

		$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$in.
12in.	...	1/4	1/4	1/6	1/9 each.
18in.	...	—	2/-	2/3	2/6 ,,
24in.	...	—	2/6	2/9	3/- ,,

Screw and Plug Bit.



CUT TWO-THIRDS SIZE.

140 This tool is made especially for finishing fine work, using plugs instead of putty to cover the screw heads. It can be gauged so as to give the correct depth for the screw and plug, boring both holes in one operation. The knives are made of Hobson's best tool steel. With the screw and plug bit we furnish a plug cutter to match. Diameter of drills fitted to sizes as follows :—$\frac{1}{2}$in. with $\frac{1}{8}$in. drill ; $\frac{9}{16}$in. with $\frac{9}{64}$in. drill ; $\frac{5}{8}$in. with $\frac{5}{32}$in. drill.

$\frac{1}{2}$in., with plug cutter, 7/6 per set ; $\frac{9}{16}$in., with plug cutter, 8/- per set ; $\frac{5}{8}$in., with plug cutter, 8/6 per set. Packed one set in a box.

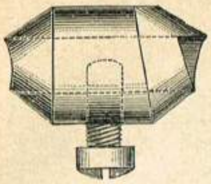
Bright Hollow or Taper Bits.

141 Hollow or Taper Bits, $\frac{3}{8}$in. 6d., $\frac{1}{2}$in. 6d., $\frac{5}{8}$in. 7d., $\frac{3}{4}$in. 8d., $\frac{7}{8}$in. 10d., 1in. 1/-.

Boxwood Handled Taper Bits.

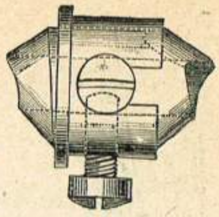
142 Boxwood - handled Taper Bits, $\frac{3}{4}$in. 11d. each.

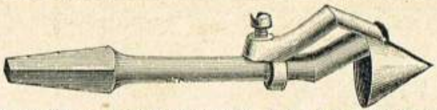
Brace Bits—*continued.*


143

143 Broughton's Patent Countersink, which can be attached to any ordinary Shell Bit, when it serves both as a depth gauge and also as a countersink. Price 1/3 each.

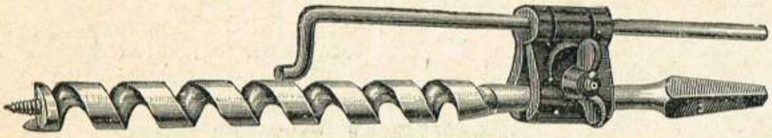
144 Ditto ditto with Fence, 2/-


144

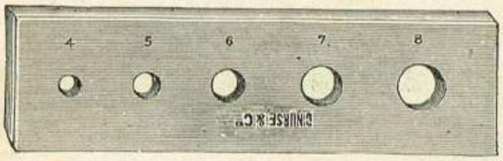


145 Wheelers' Patent Countersink with Adjustable Depth Gauge, 1/3 each.

146 Ditto ditto without Depth Gauge, 10d. each.



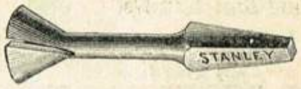
147 Bit Gauge. The cut shows the gauge in all its parts. One bolt with thumbscrew tightens the clamps on the gauge spindle and auger bit at the same time. It will fit any size bit, and exactly gauge the depth of hole to be bored. Price 1/2 each.



148 to 151 Steel Dowel Plates.

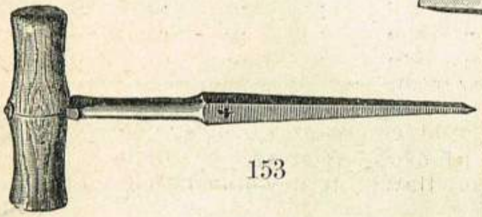
148	3 holes, sizes,	$\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ in.	1/3
149	4 ” ”	$\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$ in.	1/6
150	5 ” ”	$\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$ in.	2/-
151	6 ” ”	$\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ in.,	2/6

Plates with larger sized holes to order.



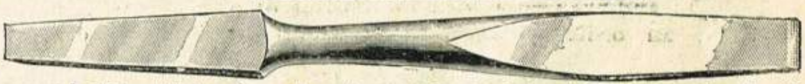
152 Improved Solid Steel Dowel Rounders, 1/- each.

Handled Rimers.


153

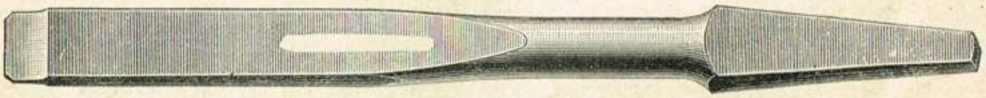
153 Boxwood-handled Square Rimers, 9d. each.

Brace Screw-Driver.



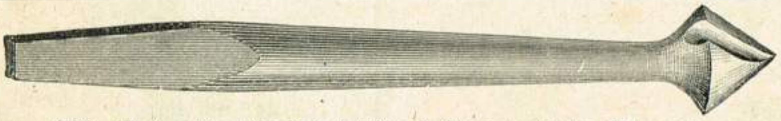
154 This we make of special steel, in four sizes, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$ in. We forge it round, thus enabling it to turn in a smaller space than any other shaped driver, and at the same time giving it the greatest possible strength. The point is ground transversely, preventing any slipping from the slot of screw-head. Well tempered and polished.

No. 1.	$\frac{7}{16}$ in. diameter, price, each	...	10d.
” 2.	$\frac{3}{8}$ ” ” ” ”	...	9d.
” 3.	$\frac{5}{16}$ ” ” ” ”	...	8d.
” 4.	$\frac{1}{4}$ ” ” ” ”	...	7d.

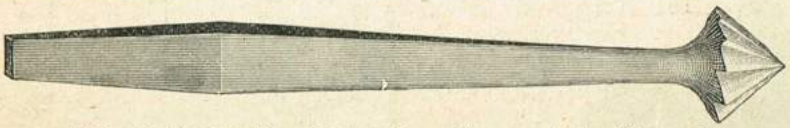


155 Extra Quality Hand-Forged Bright Turnscrew Bits, 5in., 7d.

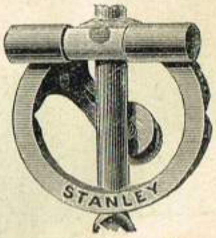
156 Ditto ditto ditto 8in., 9d.



157 Extra Quality Bright Snail Countersinks, 9d. each.



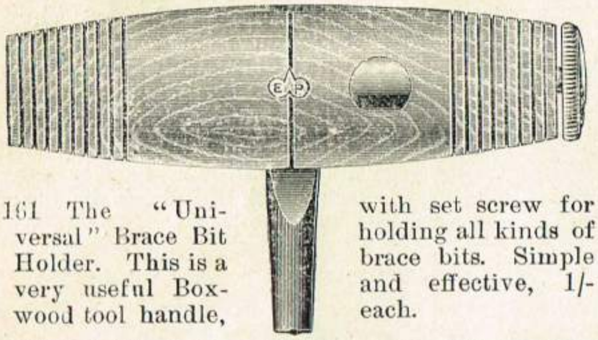
158 Extra Quality Bright Rose Countersinks, 9d. each.



159 Bit Levels, 1/3 each.

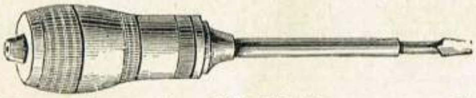
Brace Bits—*continued.*

160 Half Twist, in Sets of 12 with Adjustable Boxwood Handle, or will fit in Brace, 3/6 per Set.



161 The "Universal" Brace Bit Holder. This is a very useful Boxwood tool handle, with set screw for holding all kinds of brace bits. Simple and effective, 1/- each.

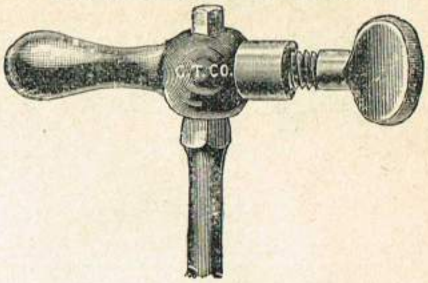
Extension Bit Holders.



162 These Extension Bit Holders are made in 3 Lengths, and are very useful for boring in places where an ordinary brace sweep could not be used.

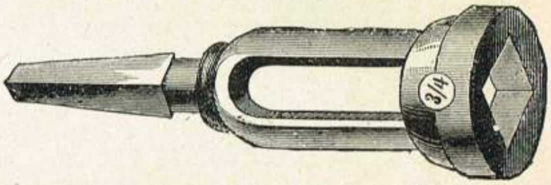
	12	18	24in.
Best American Make	3/6	4/-	4/6
Sheffield Made Ditto	2/-	2/3	2/6

Brace Bit Holder.



163 This Bit Holder is made of Malleable Iron, and is both light and strong. Price 1/- each.

Standard Brace Wrench.

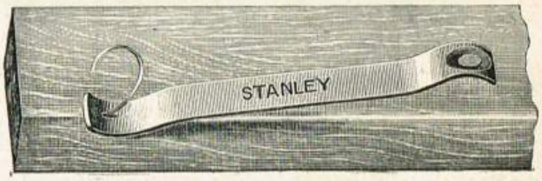


CUT ONE-HALF SIZE OF THE ¾in.

164 This Wrench is made of the best Malleable Iron, japanned and polished. The round base allows it to turn in the smallest possible space. The size is plainly marked on each Wrench.

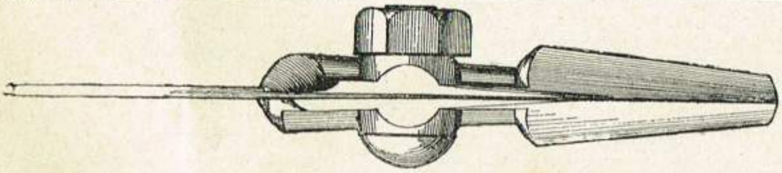
		s.	d.
Price, each, ⅜in.	... ...	0	8
" " ½ "	... ...	0	10
" " ⅝ "	... ...	1	0
" " ¾ "	... ...	1	3
" " ⅞ "	... ...	1	6
" " 1 "	... ...	2	0

Stanley Cornering Tool.

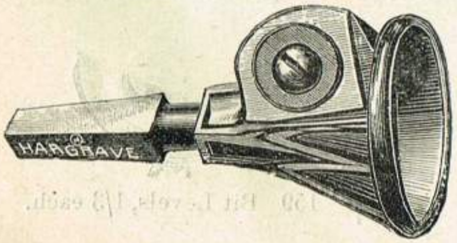


165 Used by all Wood-workers in rounding sharp edges. The Tool is made in two numbers, with a different size cutter at each end, so sharpened that owner can always cut with the grain without changing position of the work.

It requires no depth gauge, as the form of the tool allows it to cut only to a certain depth. Cornering Tool, $\frac{1}{16}$in. and ⅛in., Flat Steel, 1/6 each; Cornering Tool, ¼in. and ⅜in., Flat Steel, 1/6 each.



166 Boatbuilders' Bit Holder, 1/-; Boatbuilders' Bits, 1½d., 2d., and 2½d. each.



167 Improved Dowel Rounder with Adjustable Cutting Blade, 1/3 each.

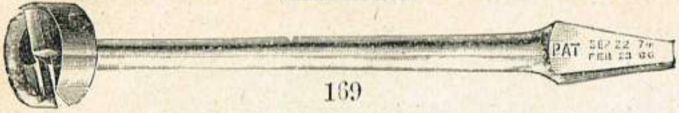
Aprons.

168 The "Handy" Amateur's or Mechanic's Apron, made to fasten round the shoulders and legs, leaving the limbs free for working treadle machines. Strongly made, with two pockets. Price 1/9 each.

Forstner Auger Bits.

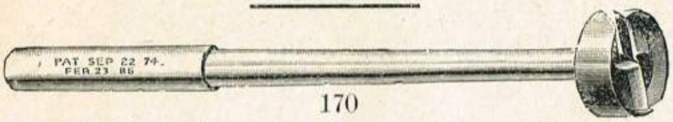
Highest Award, World's Columbian Exposition, Chicago, 1894.

Brace Bit.



169

Machine Bit.



170

For Smooth, Round, Oval, or Square Boring, Scroll and Twist Work.

HIGHEST AWARDS.

Midwinter Fair, San Francisco,	1894
World's Fair, Chicago	1893
Melbourne Exhibition	1888
American Inst. Fair,	1885, '86, '87, '88

The Forstner Labour-saving Auger Bit, unlike all other bits, is guided by its *Circular Rim* instead of its centre; consequently, it will bore any Arc of a Circle, and can be guided in any direction regardless of grain or knots, leaving a true polished surface; it is preferable and more expeditious than chisel, gouge, scroll-saw, or lathe tool combined, for core boxes, fine and delicate patterns, veneers, screen work, scalloping, fancy scroll twist columns, newels, ribbon moulding, and mortising, &c.

SAMPLE OF WORK DONE ONLY WITH
THE FORSTNER AUGER BIT

REVISED PRICE LIST.

Brace Bits have square tapering shanks, Machine Bits have round shanks $\frac{1}{2}$in. in diameter. Length of Machine Shanks 5in.

	Sizes	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$in.
169	Brace Bits ...	2/8	2/8	2/8	2/8	2/8	2/8	2/8	3/4 each.
170	Machine Bits	3/6	3/6	3/6	3/6	3/6	3/6	3/6	4/2 ,,
	Sizes	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	1	$1\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{3}{16}$in.
	Brace Bits ...	3/4	3/9	3/9	4/2	4/2	4/5	4/5	4/9 each.
	Machine Bits	4/2	4/7	4/7	5/-	5/-	5/3	5/3	5/9 ,,
	Sizes	$1\frac{1}{4}$	$1\frac{5}{16}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2in.
	Brace Bits ...	4/9	5/3	5/3	21/-	29/6	29/6	37/6	37/6 each.
	Machine Bits	5/9	6/-	6/-	21/-	29/6	29/6	37/6	37/6 ,,

All sizes up to $1\frac{1}{2}$in. in stock.

DIRECTIONS FOR USE.

TO BORE AN ANGLE, OR TO BORE AN ARC.—Hold the Bit near the flange firmly upon the wood, with the thumb over the shank, and the fingers underneath the board or block, being careful not to crowd the Bit too fast at first, until the whole flange is in the wood in its desired course. With practice many new uses will be found for the Bit.

TO SHARPEN THE BITS.

Take a hard three-cornered file, grind smooth at front end, thus making a three-cornered scraper; scrape inside of flange until sharp, and take off outside wire edge with oilstone. File the cutters with small fine-cut file. For VERY SMOOTH WORK, take the edge off, so as to form a very slight bevel on outside edge of flange, always being careful to have the flange project a little beyond the cutters. In CASE A BIT IS TOO HARD, heat a pair of tongs, and take hold of the shank back of and close to the flange, and draw the temper to a light blue colour, then cool in water, and the Bit can be easily filed and scraped.

Sets—Special Prices.

171

To Cabinet and Pattern Makers, Amateur and Professional Carpenters, and Wood Workers. All Sets of Forstner Auger Bits are packed in neat, compact boxes, and attention is called to the REDUCED PRICES for complete sets, making it advantageous to buy the bits in full sets.

REVISED PRICE LIST.

171	Per set 6 Brace Bits, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, $\frac{8}{8}$	17/6
	,, 6 Machine Bits, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, $\frac{8}{8}$	23/-
	,, 9 Brace Bits, $\frac{3}{8}$ to $\frac{11}{8}$ in 8ths, in neat case...	29/-
	,, 9 Machine Bits, $\frac{3}{8}$ to $\frac{11}{8}$ in 8ths, ,, ,, ...	35/6
	,, 11 Brace Bits, $\frac{3}{8}$ to $\frac{8}{8}$ in 16ths, ,, ,, ...	31/6
	,, 11 Machine Bits, $\frac{3}{8}$ to $\frac{8}{8}$ in 16ths, ,, ,, ...	40/-
	,, 17 Brace Bits, $\frac{1}{4}$ to $\frac{11}{8}$ in 16ths, ,, ,, ...	52/6
	,, 17 Machine Bits, $\frac{1}{4}$ to $\frac{11}{8}$ in 16ths, ,, ,, ...	65/-

172 Special Sizes at 1/- additional to the next highest size.

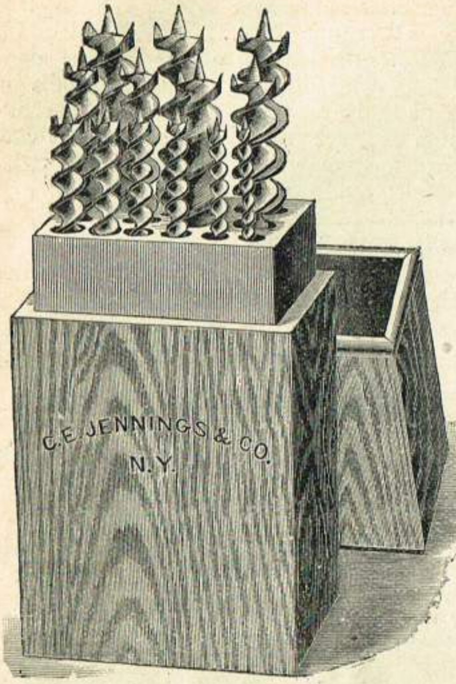
Sets of Brace Bits.

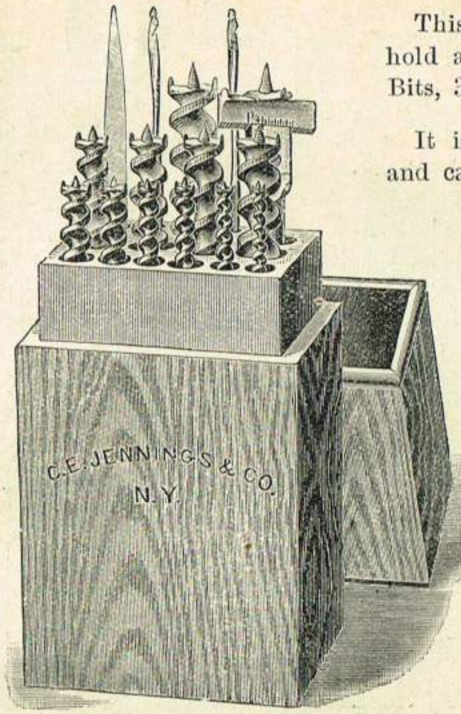
SETS OF BEST SHEFFIELD BRACE BITS.

173	Sets of 36 Best Cast Steel Brace Bits	Black 11/-
174	Ditto ditto ditto	Bright 12/6
175	Ditto ditto ditto	Straw Colour 14/-

Jennings' Superior Quality Auger Bit Sets.

PACKED IN THE MODEL BIT BOX.





This Box is designed to hold a full Set of 13 Auger Bits, $32\frac{1}{2}$ Quarters.

It is made of hard wood and carefully finished.

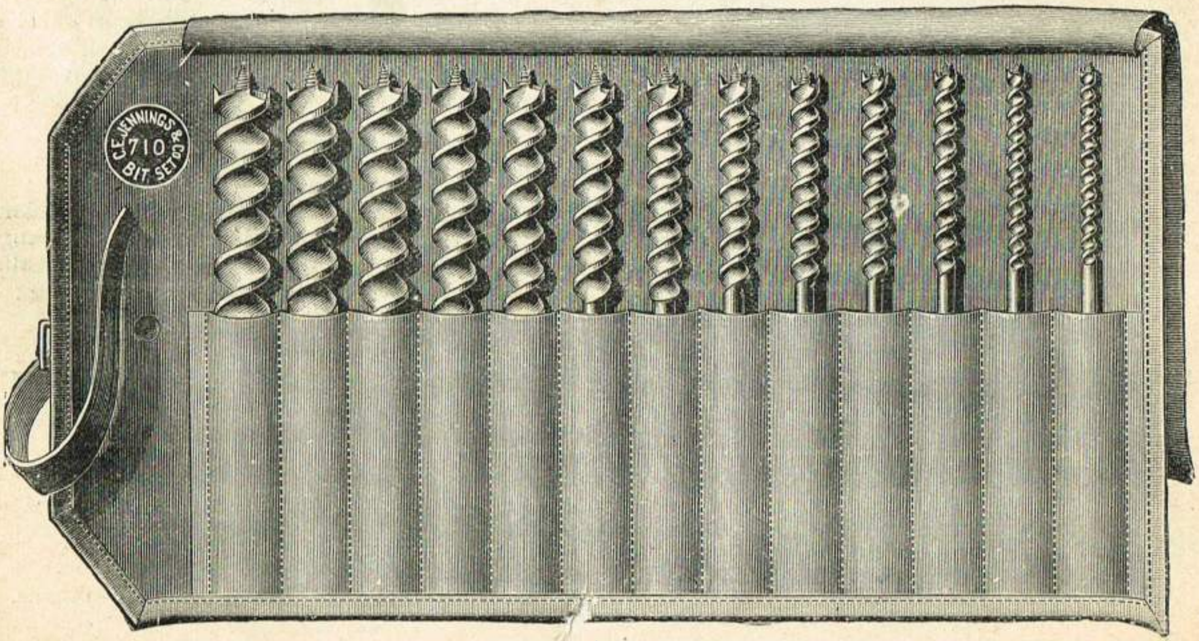
176 Model Box, containing 13 Jennings Bits, $\frac{1}{4}$in. to 1in., 17/6.

177 Ditto, containing one Gimlet Bit, each $\frac{1}{16}$ and $\frac{1}{8}$in.; 1 Jennings Bit, each size from $\frac{3}{16}$in. to $\frac{13}{16}$in., and 1 Expansion Bit, cutting from $\frac{7}{8}$ inch up to 3 inches, together with file for sharpening Bits, 25/-.

Jennings' Auger Bits in Canvas Roll.

178 Packed in improved Pattern Flexible Canvas Roll. Set of 13 Bits, from $\frac{1}{4}$in. to 1in., complete with Canvas Roll, 20/-.

$178\frac{1}{2}$ Canvas Bit Rolls, without Bits, 3/6 each.



Russell Jennings' Set of Auger Bits.

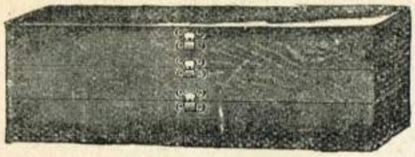


FIG. 1.

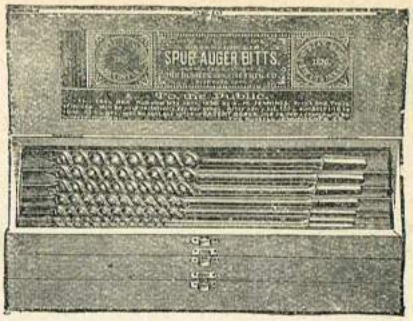

SPUR AUGER BITS.
To the Public.

FIG. 2.

179 Russell Jennings' Auger Bits, in Patent Box—complete set of 13 Bits from ¼in. to 1in., 25/- complete.

Fig. 1 shows the Box closed. It contains three sections, and each section fastens itself when closed. The Bits rest in grooves of suitable size for each particular Bit, and these grooves are so cut that when the Bits lie therein, their upper surfaces are in a plane, and when the sections or lids are closed, the Bits are held in position.

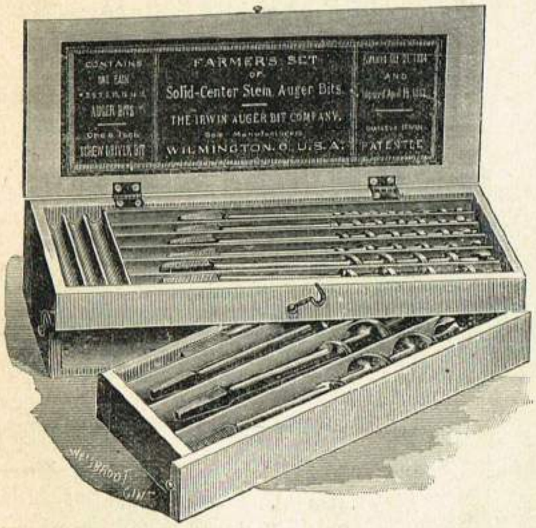
Fig. 2 shows the box with lid open, and the upper section containing $\frac{4}{16}$, $\frac{5}{16}$, $\frac{6}{16}$, $\frac{7}{16}$, $\frac{8}{16}$, $\frac{9}{16}$in.

The second section contains $\frac{10}{16}$, $\frac{11}{16}$, $\frac{12}{16}$, $\frac{13}{16}$in.

The lower section contains $\frac{14}{16}$, $\frac{15}{16}$, $\frac{16}{16}$in.

The Boxes are made of hard wood; they are very strong and durable, and ornamental in appearance. They are convenient as to size and shape, and the Bits will always be in place, so that the mechanic will know just where to find the size of Bit he wishes to use.

Irwin Patent Auger Bits in Sets.



Superior Advantages.

Owing to the fact that these Bits have but one crimp it is impossible for them to choke, as the clearance is double that of the old-fashioned kind with two crimps. No pressure is required in boring, and they will bore either in end or side of wood. They are the only Bits made having a solid centre, and are therefore much stronger than other styles.

These Bits have been made to bore much more rapidly than those of other patterns.

Other kinds vary in the rapidity with which they cut; some cutting a hole 1in. deep with every 16 to 18 revolutions, others every 18 to 20 revolutions, while ours require only 12 to 16 revolutions.

180 Set of above in Neat Wood case, from ¼ to 1in., with 1 Turnscrew Bit (10 Bits in all), 10/6.

181 Set of 13 ditto from ¼ to 1in. by $\frac{1}{16}$ths, 15/-

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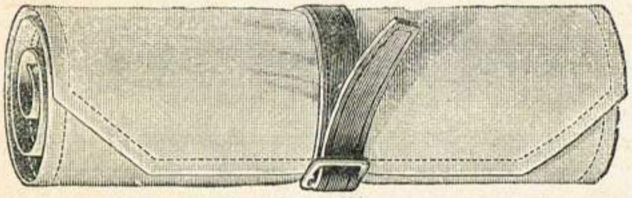
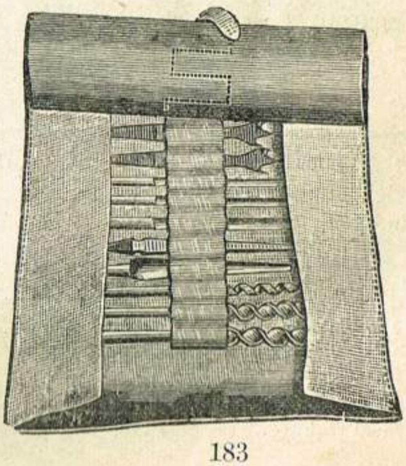
Bit Rolls.



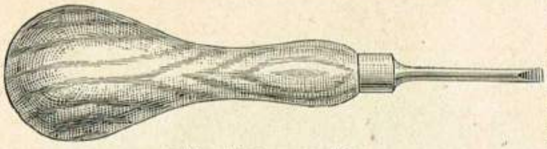
182



183

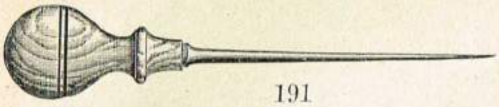
182 Canvas Bit Rolls to take 13 Twist Bits, 3/6 each. Post free, 3/9.
183 Leather Bit Rolls to hold 36 Brace Bits, 3/- each. Do. 3/3.
184 Green Baize Bit Rolls to hold 36 Brace Bits, 2/- each. Do. 2/3.

Bradawls, Marking Awls, Pricker Pads & Tool Holders.

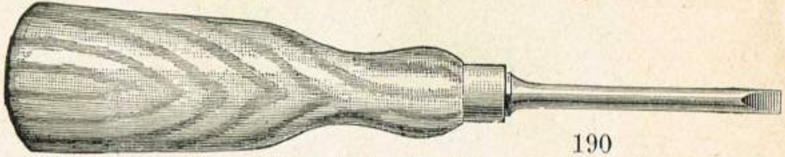


187, 188 and 189

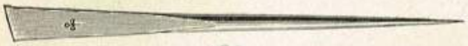
185 Best Bradawl Blades, 8d. per dozen.
186 Blindmakers' Awl Blades, 3in. long, 1/6 per dozen.
187 Ash-handl'd Bradawls, 1/6 per doz. Large size 2d. each
188 Box-handled ditto 2/- " " 3d. "
189 Boxwood-handl'd Brad'ls, pinned thro' tangs, 2/6 doz.
190 Flooring Awls, ash-handled, 3½d.; do., boxwood-handled, 5d.



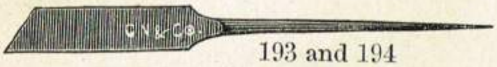
191



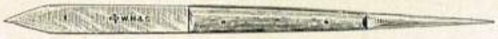
190



192



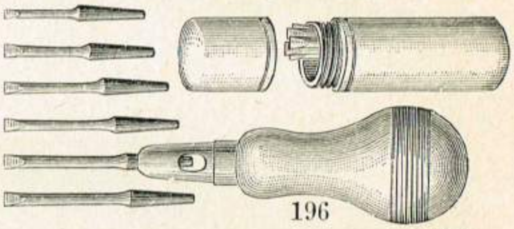
193 and 194



195

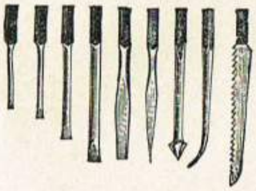
191 Handled Marking Awls, 2d., 3d. and 4d. each. Illustration shows the 3d. Awl.
192 Small Striking Knives, 3d. each.
193 Striking or Setting-out Knives, 4½d. each.
194 Ditto Best London Made, 6d. each.
195 Improved Beech Handled Striking Knives, 6d. each.

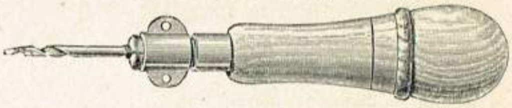
196 Improved Solid Boxwood Self Grip Bradawls with 12 blades in Boxwood Case, 1/6 each.



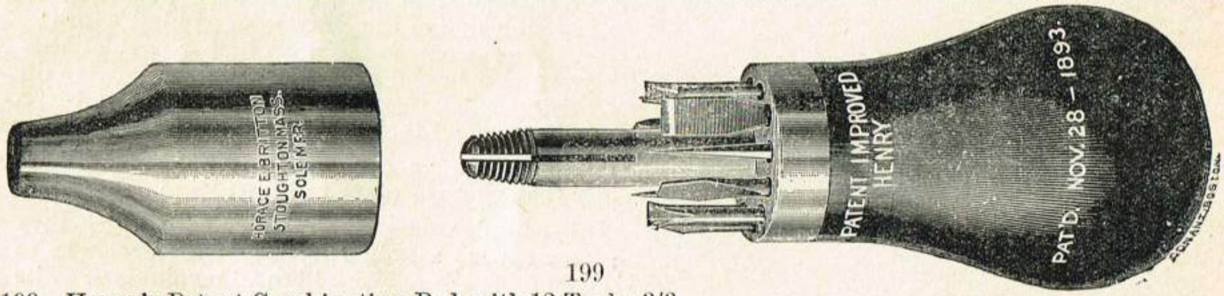
196

197 Sheffield-made Hollow Boxwood Pricker Pad with 12 Tools, 2/-.
198 Ditto with 18 Tools, 3/3 each.





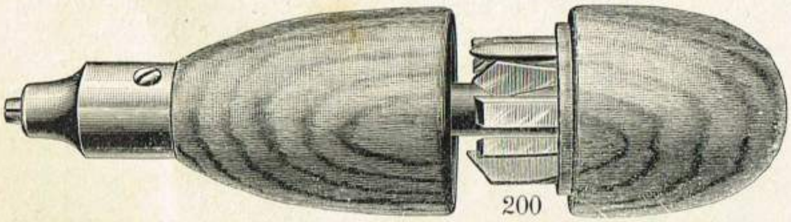
197 & 198



HORACE E. BRITTON STOUGHTON MASS. SOLE MFR.
PATENT IMPROVED HENRY
PAT'D. NOV. 28 – 1893.

199

199 Henry's Patent Combination Pad with 12 Tools, 3/3.



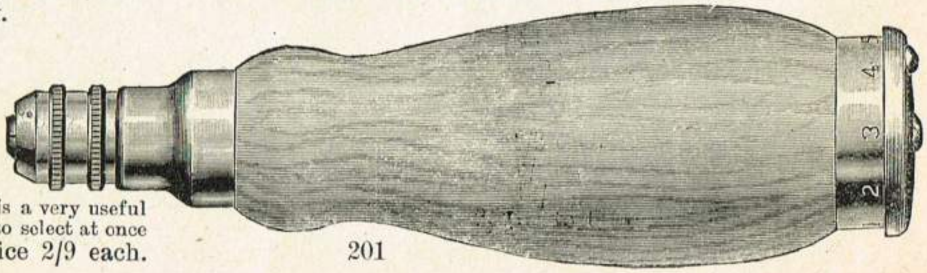
200

200 New Pattern Improved Tool Holder. The handle of this tool is made of Cocobola wood, and, as shown in the cut, is arranged with separate cells for each of the 12 Tools.
Length, 4¾ in. Price 3/3 each.

Turret Head Tool Set.

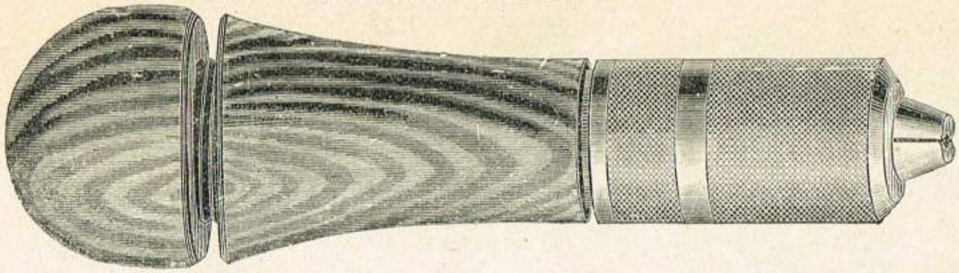
201 Assorted Tools, in Handle, and with adjustable Chuck.

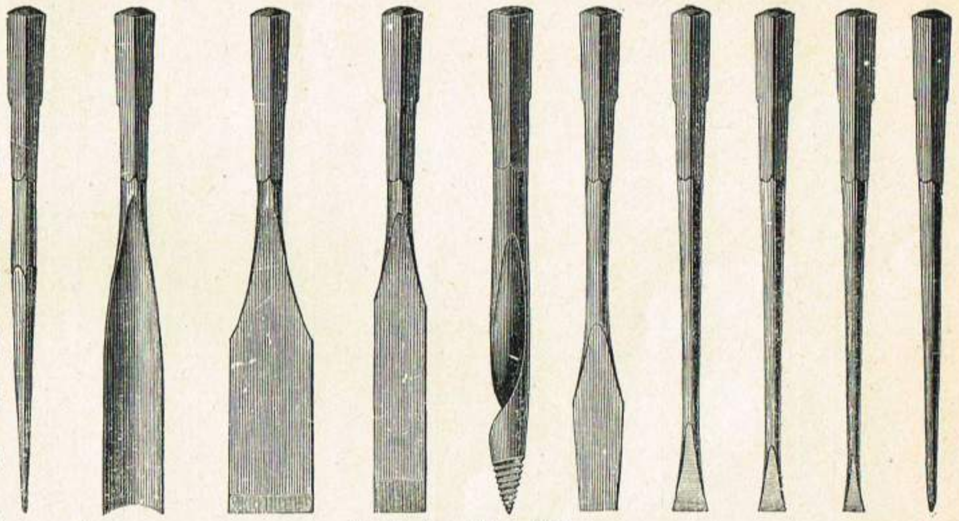
In bringing out this Set it has been our aim to produce a handy pocket Tool Set, the price and quality of which will insure its popularity. The quality of the tools included has been carefully attended to. The turret arrangement upon the head is a very useful addition, which enables one to select at once the tool required. Price 2/9 each.



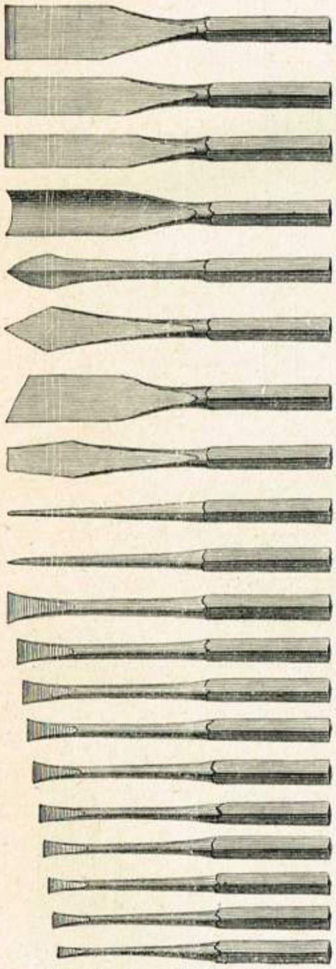
201

Pricker Pads, etc.—*continued.*

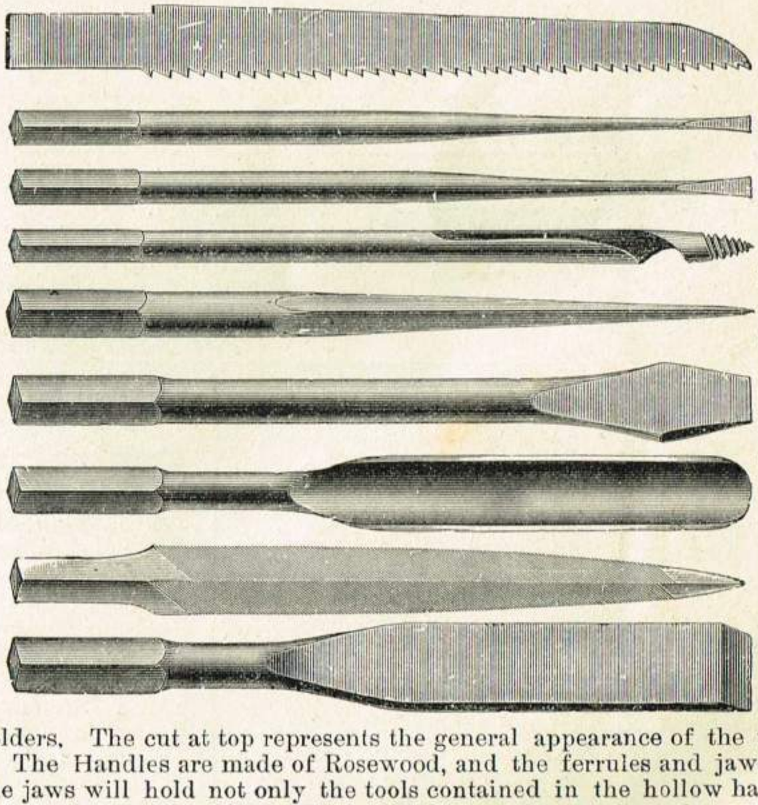




Tools for Pad 203



Tools for Pad 202



Tools for Pad 204

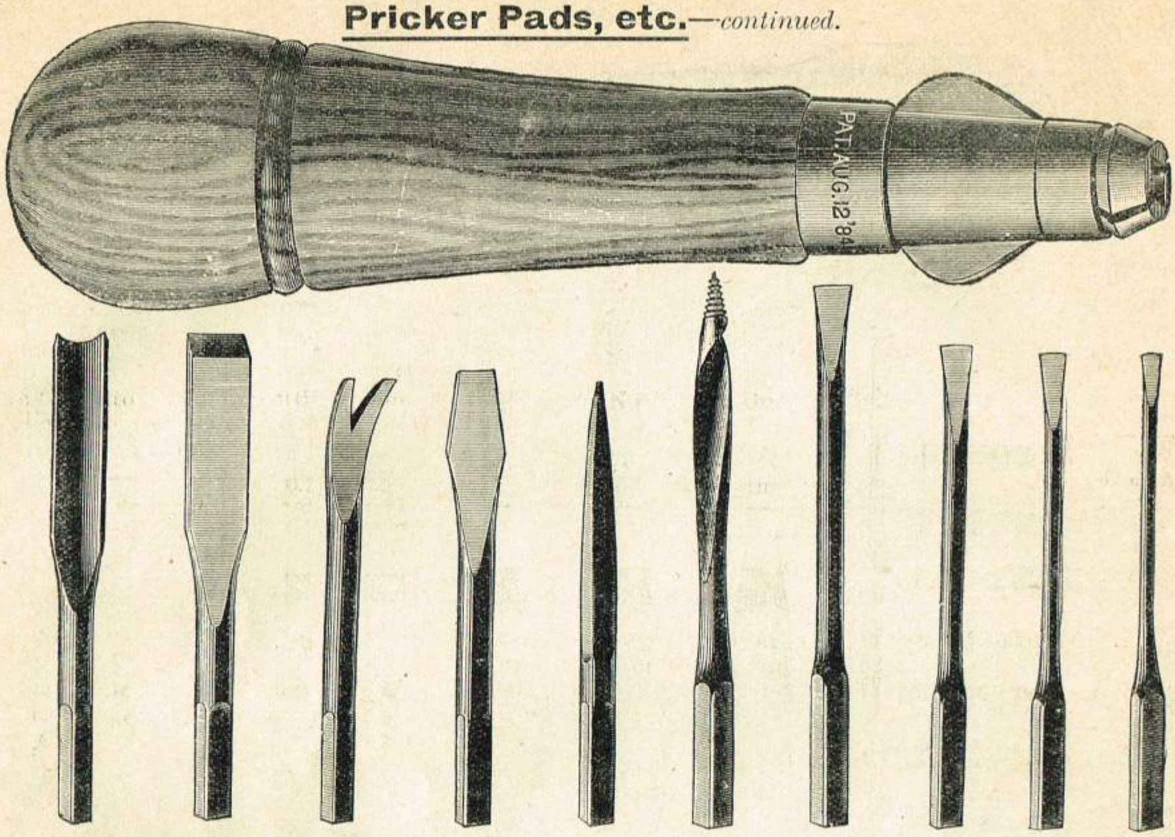
Miller's Falls Improved Tool Holders. The cut at top represents the general appearance of the three following Tool Holders. The Handles are made of Rosewood, and the ferrules and jaws are heavily Nickel Plated, the jaws will hold not only the tools contained in the hollow handle, but all other things from a needle to a mill file. The Handles are larger than the cut, the length of each being given in the further description of each Tool.

202 Improved Tool Holder, as above description, containing 20 Cast Steel Tools. Length of Holder 6 inches. Price 4/3.

203 Ditto ditto with 6¼in. Handle and 11 Tools, 4/3 each.

204 Ditto ditto with 7½in. Handle and 11 Tools, 6/6 „

Pricker Pads, etc.—*continued.*



205 Patent Apple Tree Handle adjusting Tool Pad and 10 Tools, 2/-
206 Ditto, with best Rosewood Handle and Plated Fittings, 3/-
207 Ditto, ditto, extra large, with 9 Tools and Large Saw Blade, 5/-

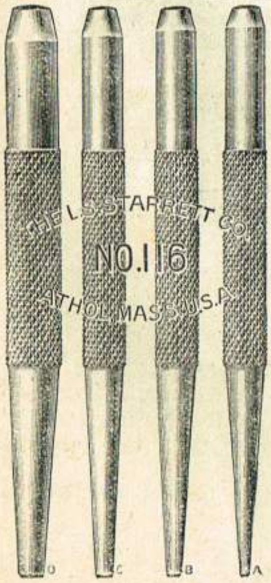
Brad, Centre, and Hand-rail Punches.

208

208 Best London Made Brad Nail Punches, round or square, 2d. each.
209 Ditto ditto Flooring Punches, round or square, 3d. each.
210 Improved Cup Point Nail Punches, 6d. each.

211 Hand Rail Punches, 5d. each.

211



Nail Sets.

212 Made of a fine grade of steel, both ends hardened, centres nicely knurled, tips concaved, tops oval, and the size just right.

Length of each size 4in. Diameter at tip: A, $\frac{5}{64}$in.; B, $\frac{3}{32}$in.; C, $\frac{9}{64}$in.; D, $\frac{5}{32}$in.

Price, 6d. each; ditto, nickel plated, 9d. each.

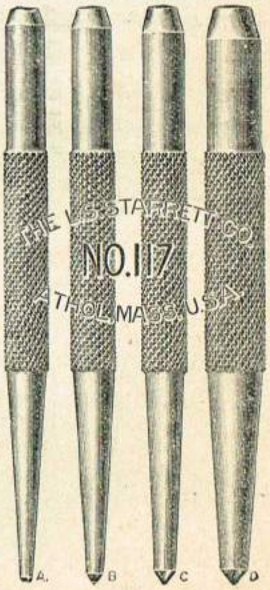
Machinists' Centre Punches

213 Made to supply the demand for a better article than has heretofore been on the market. Made of fine steel, neatly shaped, with both ends tempered and points nicely ground.

Length of each size 4in. Diameter: A, $\frac{5}{64}$in.; B, $\frac{3}{32}$in.; C, $\frac{9}{64}$in.; D, $\frac{5}{32}$in.

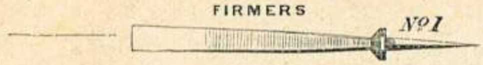
A larger size, E, is made for heavy work—diameter $\frac{1}{4}$in., diameter of knurled part $\frac{1}{2}$in.

Price, 9d. each; ditto, nickel plated, 1/- each.

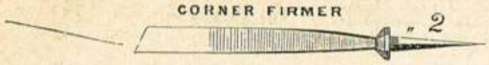


Carving Tools.

FIRMERS

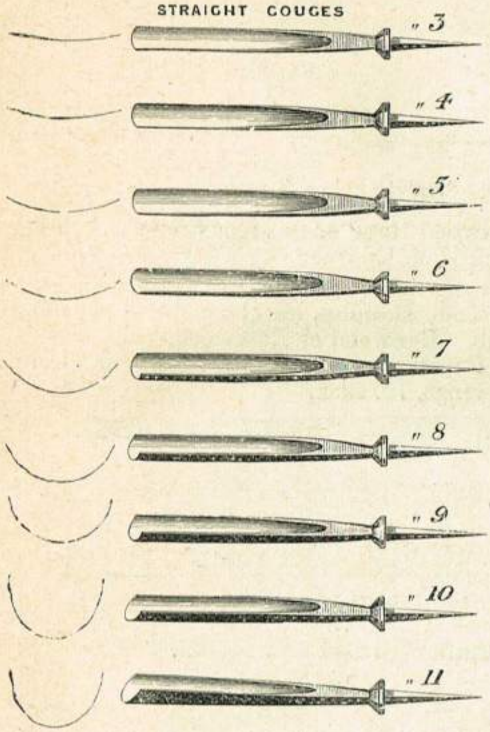


CORNER FIRMER



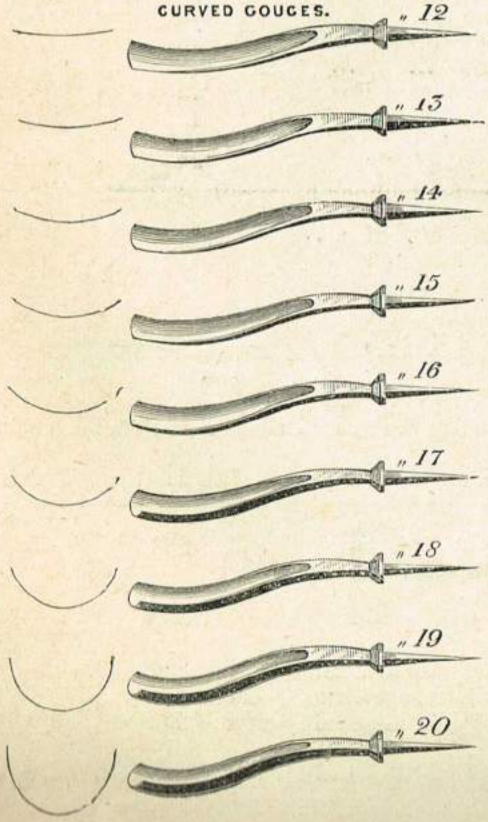
Nos.	$\frac{1}{16}$ to $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
10	9d.	10d.	1/1	1/3
11	10d.	1/1	1/3	1/5

STRAIGHT GOUGES



Nos.	$\frac{1}{16}$ to $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$in.
1 & 2	7d.	8d.	9d.	10d.	1/0	1/1
3 to 9	8d.	9d.	10d.	11d.		

CURVED GOUGES.



Nos.	$\frac{1}{16}$ to $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
12 to 18	9½d.	11d.	1/2	1/4
19 & 20	11d.	1/2	1/4	1/7

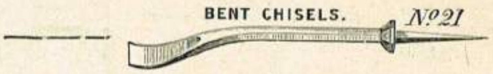
Best Quality,

S. J. Addis' make

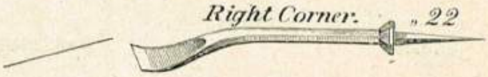
Every Tool is sent out ground sharp and set ready for immediate use.

All sizes rising by $\frac{1}{16}$ths from $\frac{1}{16}$in. to $\frac{5}{8}$in., and then by $\frac{1}{8}$ths in.

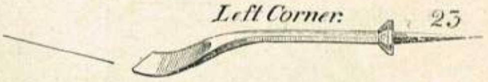
BENT CHISELS.



Right Corner.

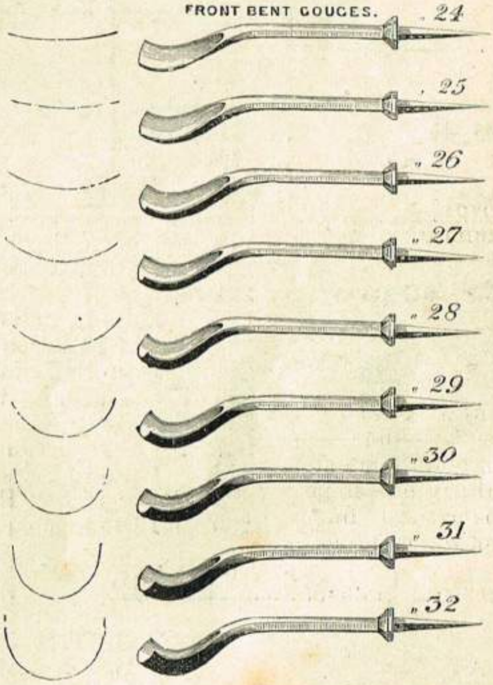


Left Corner.



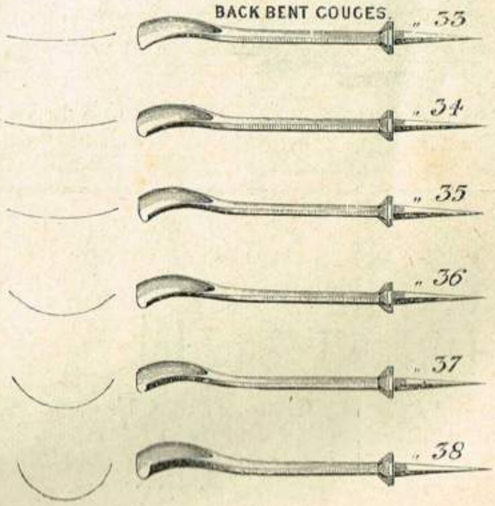
Nos.	$\frac{1}{16}$ to $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
31 & 32	11d.	1/2	1/5	1/7

FRONT BENT GOUGES.

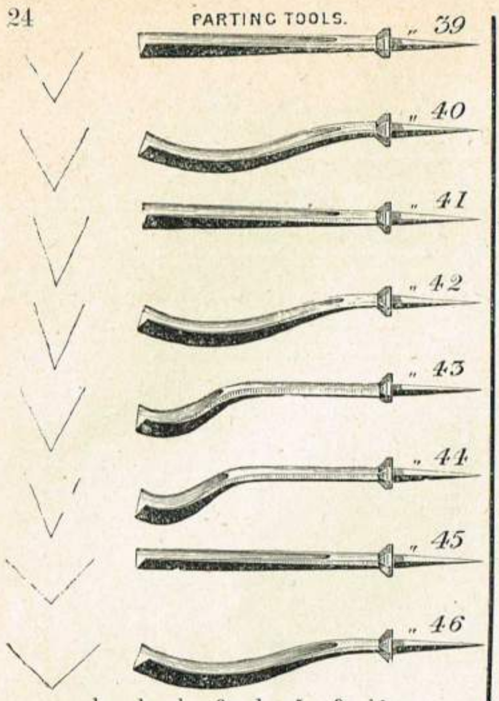


Nos.	$\frac{1}{16}$ to $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$in.
21 to 23	8½d.	8½d.	10½d.	1/2	1/4	1/7
24 to 30	9½d.	10½d.	1/2	1/4		

BACK BENT GOUGES.

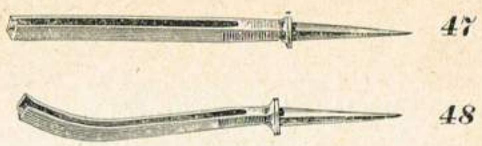


Nos.	$\frac{1}{16}$ to $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
33 to 38	9½d.	10½d.	1/2	1/4

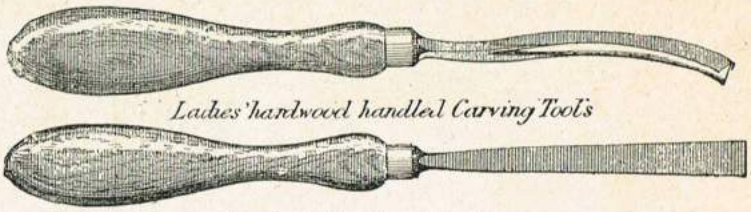


$\frac{1}{32}$, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$in.

Nos. 39, 41, 45 ... ... 11½d. each.
„ 40, 42, 43, 44, 46 ... 1/1 „



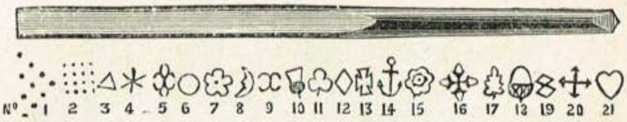
Macaroni Tools, Straight or Bent, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, or $\frac{3}{8}$in., 1/4 each.



Ladies' Carving Tools.

214 Set of 12 Hardwood Handled do., ready for use, 12/6 set.
215 „ 12 Beech Handled Spade Carving Tools, 7/6 set.

216 Best Carving Tool Handles, Beechwood, 1/3 per dozen.
217 Ditto ditto Boxwood or Rosewood, 2/6 „
218 Fancy Steel Punches, assorted patterns, for ground work of Carvings, 7d. each.



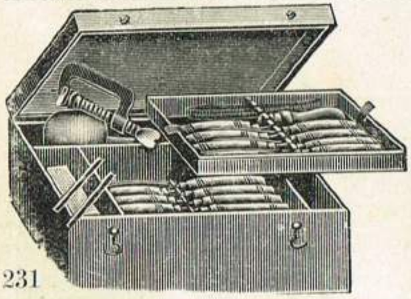
218

South Kensington Sets of S. J. Addis' Carving Tools.

CELEBRATED S. J. ADDIS' CARVING TOOLS
SOUTH KENSINGTON SET

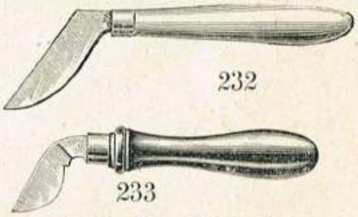
219	Set of 7 Beech Handled in Cardboard box	6/6
220	Ditto in Polished Pine Case	9/-
221	Set of 7 Box Handled in Cardboard Box	7/9
222	Ditto in Polished Pine Case	10/3
223	Set of 12 Beech Handled in Cardboard Box	11/6
224	Ditto in Polished Pine Case	15/-
225	Set of 12 Box Handled in Cardboard Box	13/6
226	Ditto in Polished Pine Case	17/-
227	Set of 18 Beech Handled in Cardboard Box	17/-
228	Ditto in Polished Pine Case	20/-
229	Set of 18 Box Handled in Cardboard Box	20/-
230	Ditto in Polished Pine Case	23/-

Superior Outfit of S. J. Addis' Carvers' Tools in Oak Case.

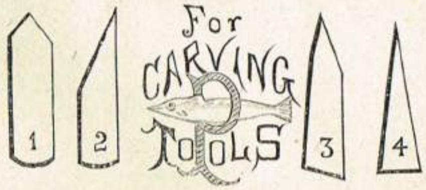


231

231 This Outfit contains a Set of 18 Best Handled South Kensington Tools, 3 Buhl Punches, 1 Carver's Knife, 1 Set of 4 Arkansas Slips, 1 Mallet, 2 Cramps, 1 Carver's Router, and Book of Instructions. Price, 40/-.

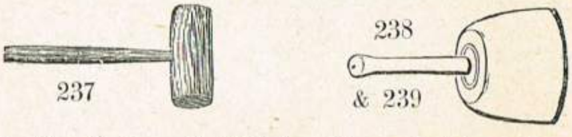


232 and 233 Handled Carving Knives. Beech Handled, 6d. each. Ebony ditto, 9d. each.
234 Best Quality Swedish Carving Knives, 1/3, 1/6, 1/9, 2/-, 2/6 each.



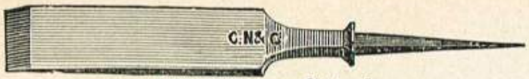
235

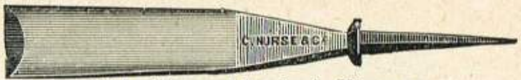
235 Special Arkansas Oilstone Slips, 1/- each. Set of 4 ditto Assorted Shapes in Neat Case, 3/3.
236 Ditto "Invicta," Emery Carving Tool Slips. Set of 4 Assorted Shapes, 4/- per set.

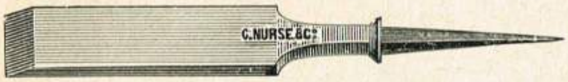


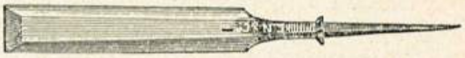
237 Small Round Mallets, 6d. and 8d. each. Boxwood ditto, 1/- each.
238 Best London-made Carvers' Mallets, 1/3, 1/6, 1/9.
239 Ditto ditto in Polished Boxwood, 2/3, 2/6, 2/9.

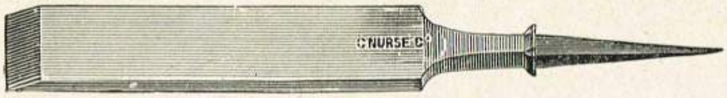
Chisels.

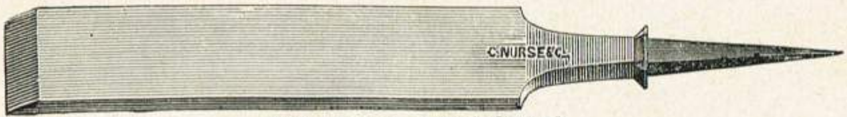

240 Firmer Chisel.

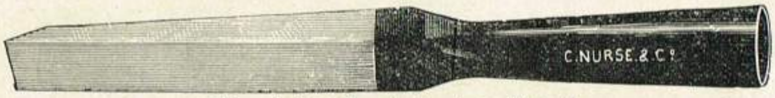

244 Round-backed Firmers.

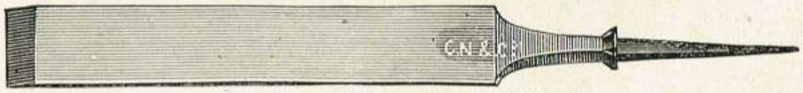

245 Strong Firmer Chisel.

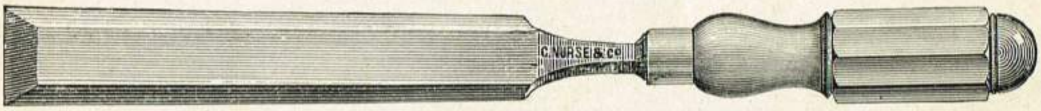

246 Bevelled Edge Firmer.

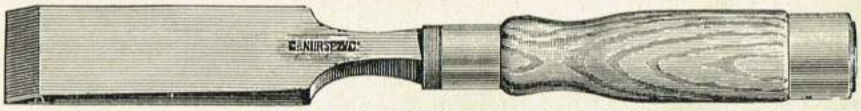

247 Coachmakers' Chisel.

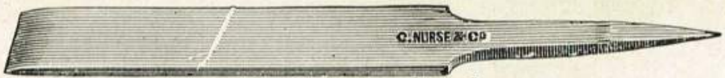

249 Millwrights' Chisel.

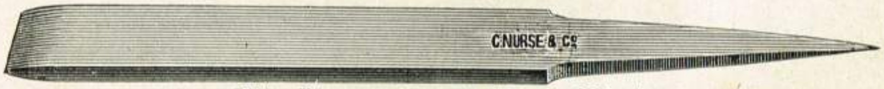

250 Solid Steel Socket Chisel.


251 Long Thin Paring Chisel.


252 Handled Bevelled Edge Paring Chisel.

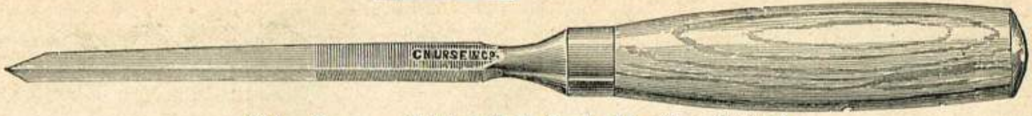

254 Extra Strong Ash Handled Chisels, with 2 Bright Iron Ferrules.


255 Turning Chisels.

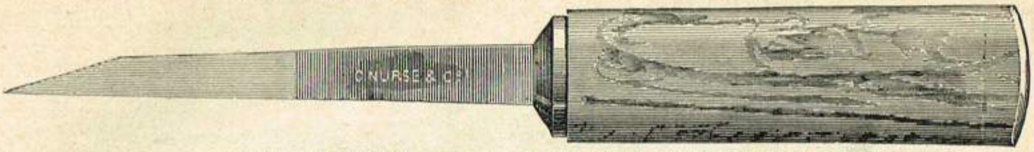

256 Long Strong Turning Chisels.

	1/16 1/8 3/16 or 1/4	3/8	1/2	5/8	3/4	7/8	1	1⅛	1¼	1½	1¾	2in.		
240 Firmers	3½	4	4½	5	5½	6½	7	8½	9	11	1/2	1/5	Set of 12 to 1½	5/6
241 Ash Handled Ditto	5½	6	6½	7	7½	8½	9	10½	11½	1/1½	1/5	1/8	Ditto	7/6
242 Boxwood Handled Ditto ...	6½	7	7½	8	8½	9½	10	11½	1/-½	1/3	1/7	1/10	Ditto	8/6
243 Octagon Box Handled ...	7½	8	8½	9½	10	11	1/-	1/1	1/3	1/5	1/9	2/-	Ditto	10/-
244 Round-backed Firmers ...	4½	5	5½	6	7	8	9	10	11	1/1	—	—	Set of 9 to 1½	5/6
245 Strong Firmers	4½	5	5½	6½	7½	8½	9½	11	1/-	1/2	1/6	1/8	Ditto	5/9
246 Bevelled Edge Firmers ...	7	7½	8	8½	9	9½	10	1/1	1/2	1/4	1/8	1/10	Ditto	7/3
247 Coachmakers' Chisels ...	6	6½	7	8	9	10	11	1/2	1/3	1/6	1/9	2/3	Ditto	7/6
248 Bevelled Edge Ditto ...	1/-	1/1	1/1	1/2	1/3	1/4	1/5	—	1/11	2/1	2/6	3/-	Set of 6 to 1½	8/6
249 Millwrights' Chisels ...	8	9	10	11	1/1	1/2	1/4	—	1/9	2/2	2/8	3/2	Ditto	7/9
250 Solid Steel Socket Chisels ...	1/1	1/1	1/1	1/2	1/3	1/4	1/5	—	1/8	1/11	2/2	2/5	Set of 9 to 1½	12/-
251 Long Thin Paring Chisels ...	6½	7	7½	8	9	10	11	—	1/4	1/7	1/10	2/4	Set of 6 to 1½	5/6
252 Bevelled Edge Ditto... ...	11	11½	1/-	1/1	1/2	1/2	1/4	—	1/10	2/2	2/8	3/1	Ditto	8/6
253 Ditto Octagon Box Handled	1/4	1/4	1/5	1/5	1/6	1/7	1/9	—	2/3	2/7	3/2	3/8	Ditto	11/-
254 Extra Strong Handled Chisels	11	11	11	1/-	1/1	1/2	1/3	—	1/5	1/8	2/-	2/2	Ditto	7/3
255 Turning Chisels	5	5½	6	7	8	9	10	—	1/0	1/4	1/7	1/10	Ditto	4/6
256 Long Strong Ditto	8	9	10	11	1/-	1/1	1/2	—	1/6	1/11	2/5	2/10	Ditto	7/-

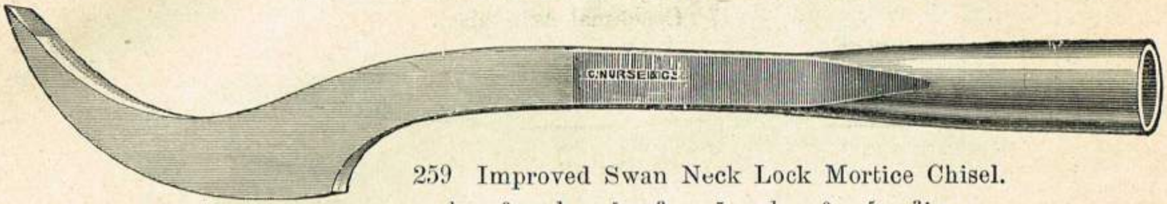
Chisels—*continued.*



257 Boxwood Handled Sash Mortice Chisel.



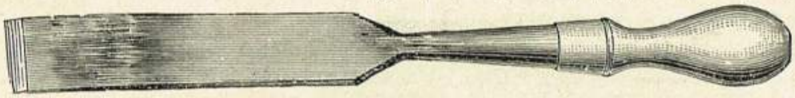
258 Best Solid Steel Handled Mortice Chisel.



259 Improved Swan Neck Lock Mortice Chisel.

		⅛	$\frac{3}{16}$	¼	$\frac{5}{16}$	⅜	$\frac{7}{16}$	½	$\frac{9}{16}$	⅝	¾in.
257	Boxwood Handled Sash Mortice	1/7	1/7	1/7	1/7	1/9	1/10	1/11	2/1	2/3	2/6, set of 9 to ⅝in., 16/-
258	Best Handled All-Steel Mortice	1/10	1/10	1/10	1/10	2/-	2/-	2/2	2/3	2/5	2/11, set of 9 to ⅝in., 17/6

259 Improved Swan N eck Lock Mortice Chisel, $\frac{7}{16}$in., 3/- ; ½in., 3/2, $\frac{9}{16}$in., 3/4 ; ⅝in., 3/4 each.

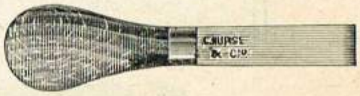


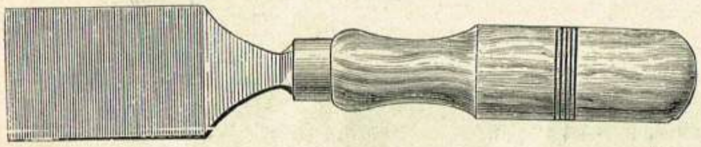
260 Light American Handled Socket Chisels.

¼	⅜	½	⅝	¾	⅞	1	1¼	1½	1¾	2in.
10d.	11d.	1/-	1/1	1/2	1/3	1/4	1/6	1/8	1/10	2/-

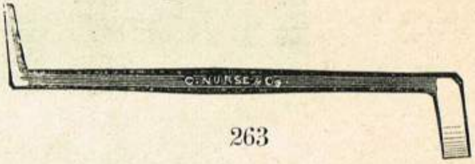
Set of 9 to 1½in., 10/- per set.

262





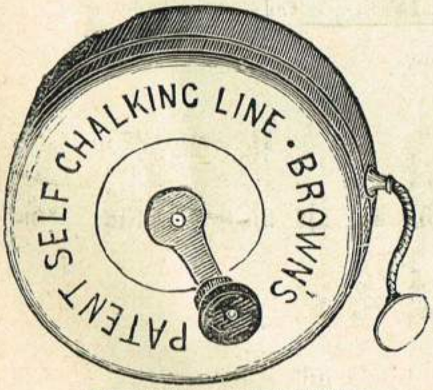
261 Handled Sash Pocket Chisels, 1½in., 1/- ; 1¾in., 1/2 ; 2in., 1/4 ; 2¼in., 1/6 ; 2½in., 1/9 each.



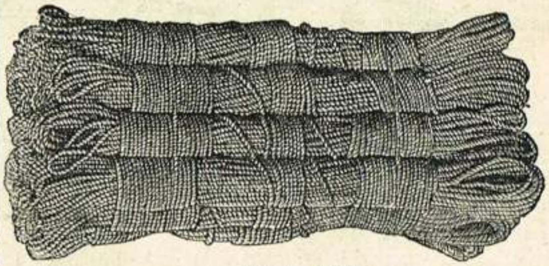
263

262 Handled Button Hole Chisels, ⅜in. to ⅝in., 6d. each ; ¾in. 6d., ⅞in. 7d., 1in. 8d. each.
263 Drawer Lock Chisels, 9d. each.

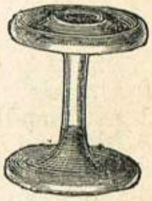
Chalk Lines and Reels.


PATENT SELF CHALKING LINE · BROWN'S

BROWN'S IMPROVED SELF-CHALKING LINE AND REEL.
264 This is a decided improvement on the ordinary Chalk Line and Reel, as the line is ready chalked, and thereby saves much time and labour. Price, complete with 25ft. of line, 6d., post free 8d.



265 to 266

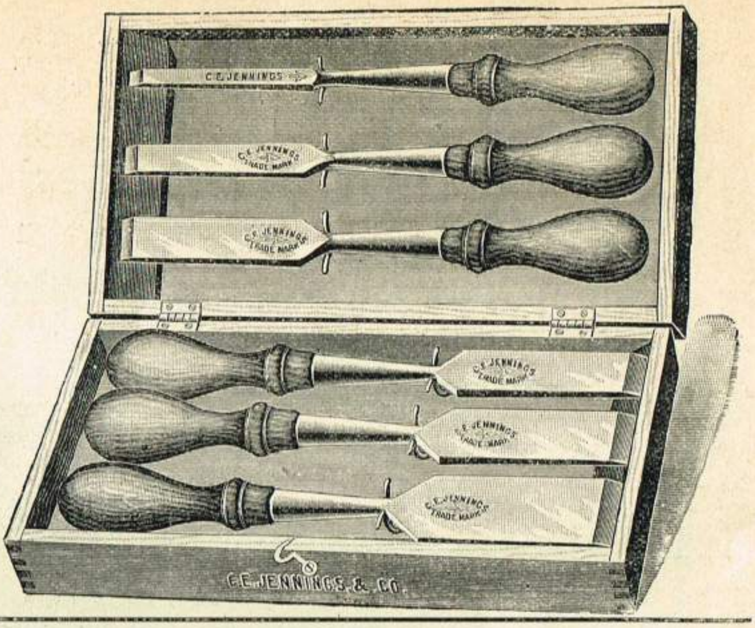


267

265 Hemp Chalk Lines, 1d., 1½d., and 2d. per knot.
265½ Cotton Chalk Lines, 2d. per knot.
266 Peacock's Best Cotton Chalk Lines—Thin, 3d. ; Thick, 4d. per knot.
267 Reels for ditto—Ash, 2d. ; Boxwood, 3d. each. Extra Long Boxwood Reels, 4d. and 6d. each.
268 Pins for ditto—Iron, 4d. ; Steel, 8d. ; Bright Steel, 10d. per pair.

New Sets of Best American Socket Chisels.

These new Chisels are made from finest tool steel. The blades are $3\frac{3}{4}$in. long, and are designed for Manual Training Schools, Amateurs and Fine Mechanics, where it is necessary to get down close to their work.



Chisel Sets. No. 401J.

This illustration represents our New Chisel Sets, Nos. 104J, and 401J. No. 104J are packed in chestnut box, and No. 401J in a quartered oak box.

No. 401J. Chisels, Cocobolo Handles, $\frac{1}{4}$ to $1\frac{1}{2}$in., one each, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$in. ... . 13/6 per set

No. 104J Chisels, Hickory Handles, $\frac{1}{4}$ to $1\frac{1}{2}$in., one each, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$in. ... ... 11/6 per set

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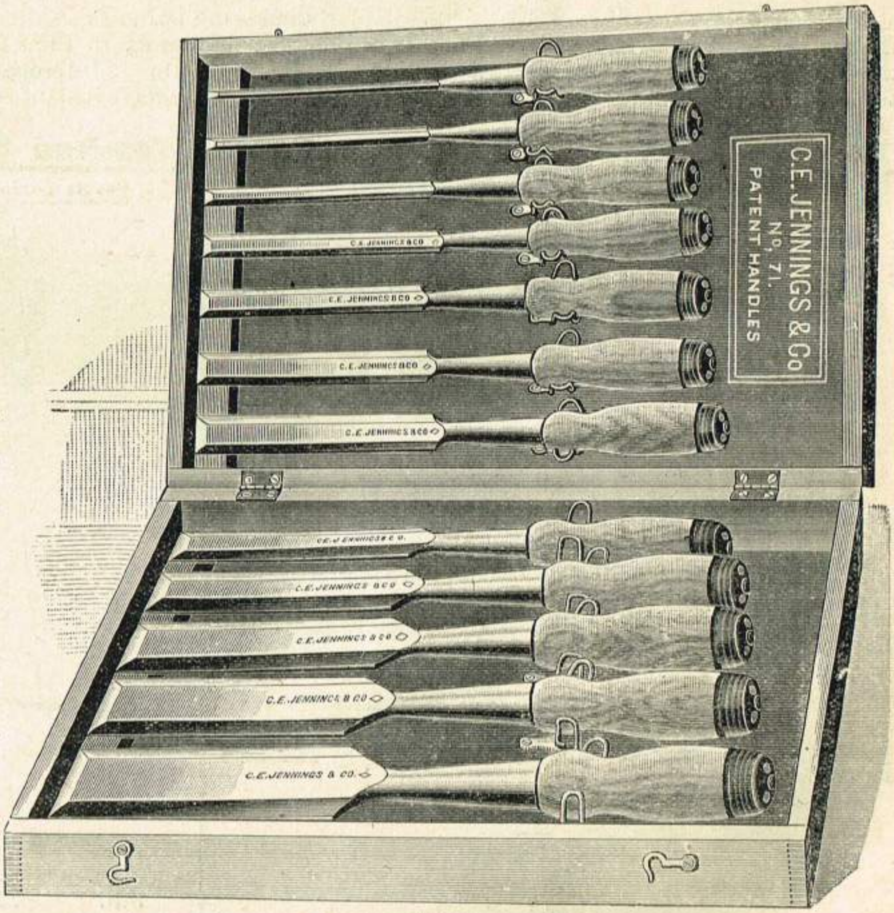
Chisel Sets. No. 71J.

New Design. Bevelled Edges. Patent Leather Tipped Handles.

These handles are patented and hand finished.



This Cut represents No. 71J Chisel Set, containing one chisel each $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, and 2in., packed in our improved Chisel Cabinet.

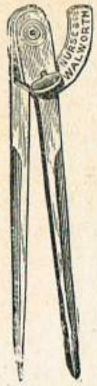
Price, complete,
35/-
per set.

The blades of all our Chisels are made of the best Tool Steel, tempered by an improved process. They have bevelled edges and are ground sharp and set ready for use. The bevelled edges make the chisel lighter and easier to sharpen. Each Chisel is tested in hard wood before leaving the factory.

CONDITIONS OF WARRANTY.

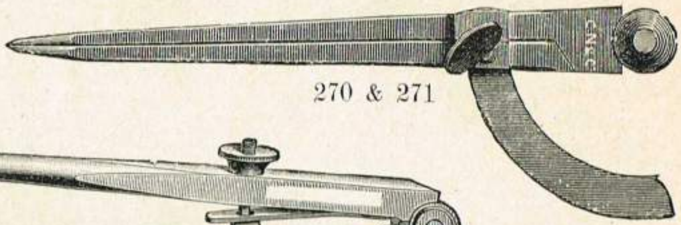
We warrant all Chisels to be perfect when they leave the factory, so far as the material and workmanship is concerned. If a tool proves too soft and bends on the edge or breaks in consequence of a flaw in the steel, and is returned within 30 days from date of purchase, a new tool will be given in exchange. If it is broken where the steel is sound it will not be exchanged.

Compasses, Spring Dividers, and Trammel Heads.

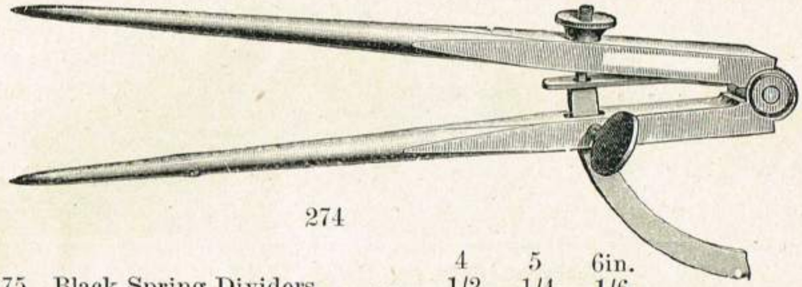


269

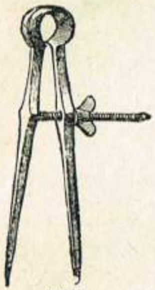
		5	6	7	8	9	10	12in.
269	Bright Wing—Special	8d.	10d.	1/-	1/2			
270	Best Lancashire Black Wing	1/6	1/8	1/10	2/-	2/3	2/6	3/9
271	Ditto, All Bright	2/6	2/8	2/10	3/-	3/3	3/6	5/-
272	Best Millwrights'...				3/3		3/6	5/-
273	Best Black Lancashire Wing Compasses with Loose Point to hold pencil		3/-	3/3	3/6			
274	Bright Wing Compasses with sensitive adjustment		1/-	1/3	1/6			



270 & 271



274



275

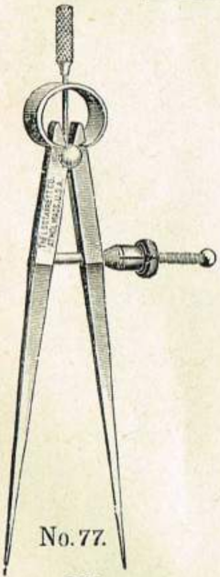
		4	5	6in.
275	Black Spring Dividers ...	1/2	1/4	1/6

PATENT DIVIDERS, WITH SOLID AND SPRING NUT.

These tools are made on scientific principles, the spring being so applied that a firm joint is always maintained, and an even tension of the legs secured when open to their full extent, as well as when closed, thus making any backlash impossible. The tools are made interchangeable, and new parts can be supplied to replace when broken or worn. The spring nut gives instant adjustment.

The Fay Patent Spring Dividers,

With Solid and Spring Nut.



No. 77.

276

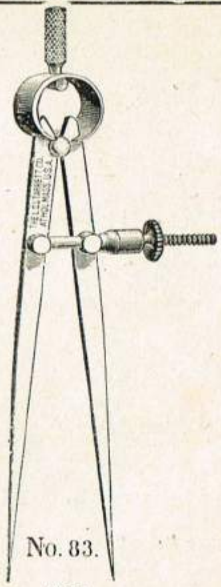
Spring Nut.

The accompanying cut represents our Spring Dividers with new quick-adjusting, automatic closing spring nut, a critical examination of which will at once show their superiority over all others on the market. Their use will save much valuable time in opening and closing spring-bow calipers and dividers. They are also made with a solid Nut.

		Prices.		
Sizes.		Solid Nut.		Spring Nut.
2½in.	...	3/4	...	4/-
3in.	...	3/4	...	4/-
4in.	...	4/3	...	4/9
5in.	...	4/3	...	4/9
6in.	...	5/6	...	6/-

Yankee Spring Dividers.

With Solid and Spring Nuts.



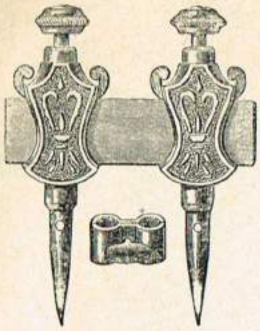
No. 83.

277

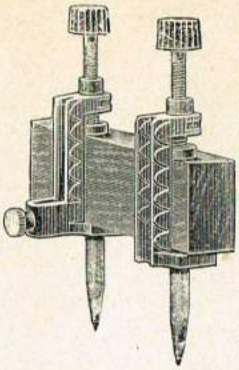
Spring Nut.

		Prices.		
Sizes.		Solid Nut.		Spring Nut.
2½in.	...	2/3	...	3/3
3in.	...	2/6	...	3/3
4in.	...	2/9	...	3/6
5in.	...	2/9	...	3/9
6in.	...	3/-	...	3/9
8in.	...	3/9	...	4/9

Compasses, Spring Dividers, and Trammel Heads—*continued.*



278 Stanley Co.'s Improved Trammel Heads, Bronze Metal with Steel Points, No. 1, Small, 3/-; No. 2, Medium, 4/-; No. 3, large, 5/- per pair.

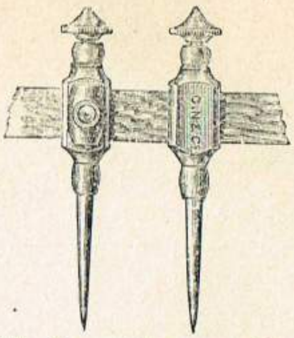


Trammel Points.

These new Trammel Points are so constructed that they can be attached to one side of any straight stick, without exact regard to its size, and are thus quickly adjusted for use.

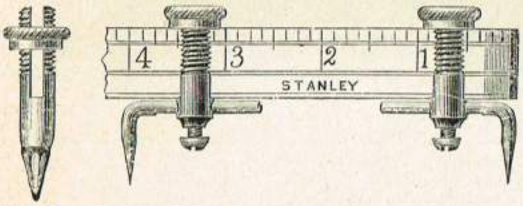
The peculiar form of the socket makes it possible to use an ordinary-sized Pencil or a full-sized, oval-shaped Carpenter's pencil.

279 Nickel plated, with Steel Points, 3/- per pair.



280 Brass Trammel Heads with Pencil Holders, to fit bars $\frac{9}{16}$in. by $\frac{1}{4}$in., 2/-; $\frac{11}{16}$in. by $\frac{5}{16}$in., 2/6; $\frac{13}{16}$in. by $\frac{7}{16}$in., 3/-; 1in. by $\frac{1}{2}$in., 3/6; $1\frac{3}{8}$in. by $\frac{5}{8}$in., 5/3 per pair.

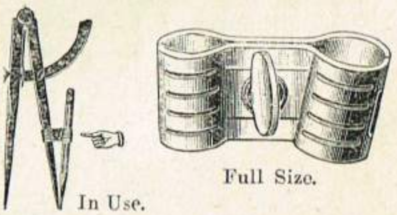
Stanley's Rule Trammel Points.



A practical form of Trammel Points, adapted for convenient use on a Carpenter's Rule. They can be attached to Folding Rules of any ordinary width; and on many kinds of work will take the place of regular Trammel Points, Callipers, or Dividers. A complete set consists of two Brass Trammel Heads, with movable Steel Points, and one Head with a Pencil Socket.

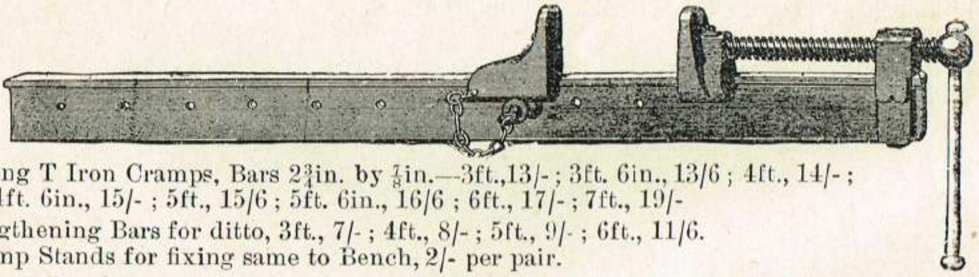
281 Rule Trammel Points, per set of three, in a box, 2/3.

Patent Pencil Clasp.


In Use.
Full Size.

282 Easily fixed to any Compass Leg, 6d. each.

Cramps.

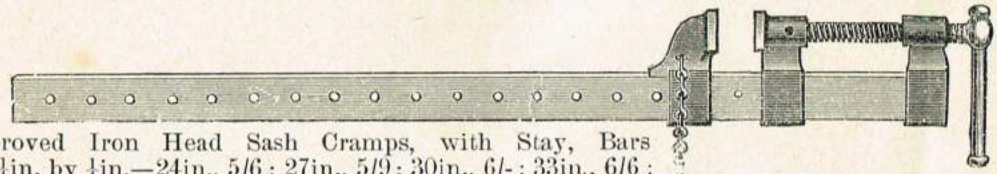


283 Strong T Iron Cramps, Bars $2\frac{3}{4}$in. by $\frac{7}{8}$in.—3ft., 13/-; 3ft. 6in., 13/6; 4ft., 14/-; 4ft. 6in., 15/-; 5ft., 15/6; 5ft. 6in., 16/6; 6ft., 17/-; 7ft., 19/-

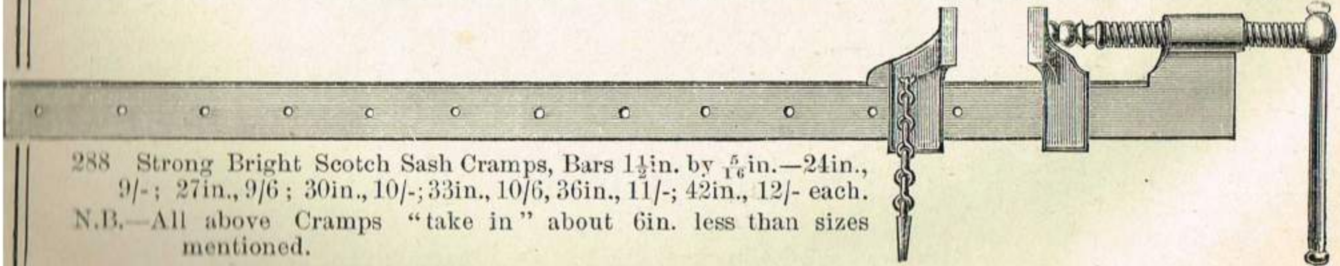
284 Lengthening Bars for ditto, 3ft., 7/-; 4ft., 8/-; 5ft., 9/-; 6ft., 11/6.
Cramp Stands for fixing same to Bench, 2/- per pair.

285 Light T Bar Cramps, section $1\frac{3}{4}$in. by $\frac{5}{8}$in.—3ft., 9/6; 4ft., 10/6; 5ft., 12/-

286 Lengthening Bars for ditto, 3ft., 5/6; 4ft., 6/6.



287 Improved Iron Head Sash Cramps, with Stay, Bars $1\frac{1}{4}$in. by $\frac{1}{4}$in.—24in., 5/6; 27in., 5/9; 30in., 6/-; 33in., 6/6; 36in., 6/9; 42in., 7/6; 48in., 8/3 each.



288 Strong Bright Scotch Sash Cramps, Bars $1\frac{1}{2}$in. by $\frac{5}{16}$in.—24in., 9/-; 27in., 9/6; 30in., 10/-; 33in., 10/6, 36in., 11/-; 42in., 12/- each.

N.B.—All above Cramps "take in" about 6in. less than sizes mentioned.

"Climax" Patent Cramps.

Unequalled for Strength, Lightness, Simplicity and Durability.

ADVANTAGES.

Self-fastening Sliding Jaw, which only requires pushing up to the Work. The greater the pressure applied, the firmer the grip.

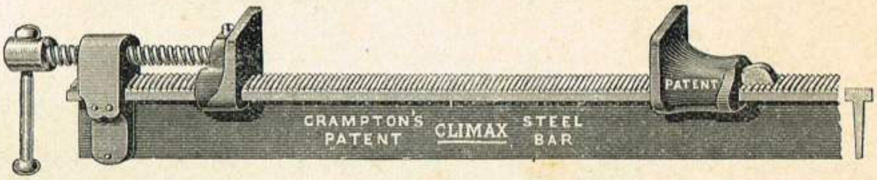
Instant Adjustment on any part of the Bar, saving time, and also obviating the necessity for a long screw, so liable to strain.

Steel Bar, without holes, giving double strength over the ordinary perforated iron bars.

Can be used in any position, there being no pin to drop out, nor any projecting parts to prevent it laying flat.

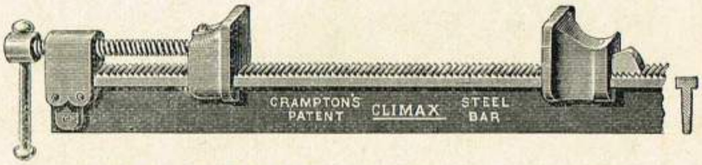
Sliding Jaw cannot cant or work loose on the Bar.

Made throughout of the best materials. The Bars of Steel and the fittings of Best Malleable Iron.



	Length over all	3½	4	4½	5	6	7ft.
289 Climax Patent T Bar Cramps,	To take in	2½	3	3½	4	5	6ft.
Section 2½in. by ⅞in., Depth of Jaws 2⅝in.		17/6	18/-	19/6	20/6	23/6	25/6

290 Lengthening Bars for same, 3ft. and above, 3/- per ft. Shoes for above for use on Bench, 2/- per pair.



Light T Steel "Climax" Cramp.

291 Steel Bar T Section, 2⅛ by ⅝ by 5/16in. Depth of Jaws, 2¼in.

Having had numerous enquiries for a T Steel Cramp lighter than our No. 289, we now offer one with considerable confidence. The Steel has been specially rolled to withstand great tensile strain.

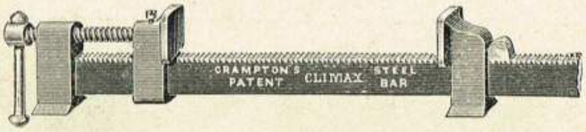
Length..................	3½	4	5	6ft.
291	15/6	16/-	17/6	18/6 each.

292 Eke, or Lengthening Bar, 3ft., 8/- each. 293 Shoes, 2/- per pair.

We strongly recommend an Eke to be ordered with every Cramp, the convenience of having one cannot be over estimated.

"Climax" Sash Cramps.

294 Steel Bar 1¼ by ¼in. Depth of Jaws, 1¾in.

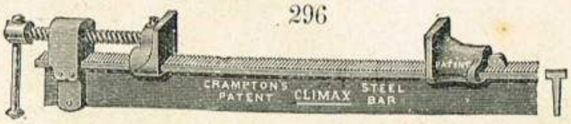


295 Steel bar, 1½ by 5/16in. Depth of Jaws, 2in.

	Length	24	30	36	42in.
294	Bright Bars, 1¼ by ¼in.	7/9	8/9	10/9	12/9 each.
295	Bright Bars, 1½ by 5/16in.	9/9	10/9	12/9	14/9 each.

296

T Steel section, 1¾ by ½in. Depth of Jaws, 1⅞in.



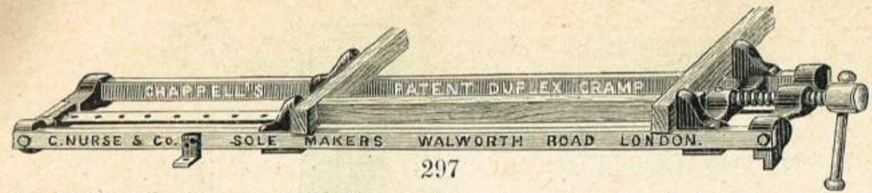
T Steel Section, 1¾ by ½in. Depth of Jaws, 1⅞in.

Length	30	36	42	48in.
Black Bars	11/6	13/6	15/6	16/6 each.

Shoes, for Bench use, 2/- per pair.

Above Sash Cramps take in about 6in. less than length given.

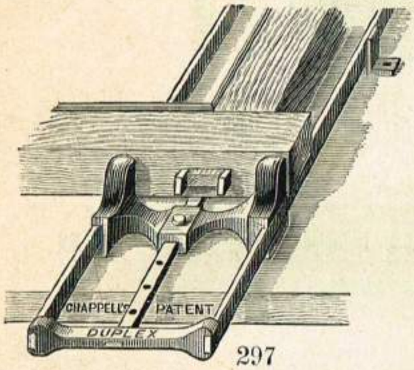
Chappell's Improved "Duplex" Joiners' Cramp.



297

By means of these Cramps a pressure is obtained on BOTH SIDES of the tenon SIMULTANEOUSLY, thereby bringing the joints up square, without undue pressure and use of "stretchers." They will be found of great service in glueing up sashes, doors, framing, &c., of a light character, also for jointing, setting out, &c.

Used in Railway Works, also by Builders, Shop Fitters, &c.



297

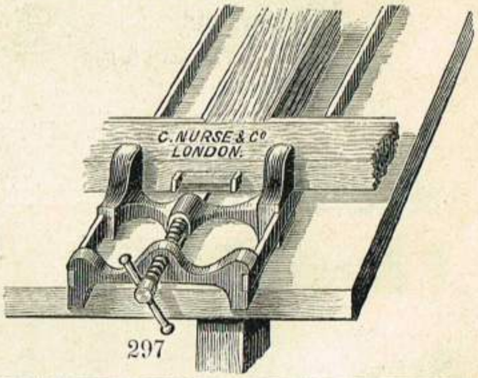
PRICES

Rolled (Steel) Bars and Malleable Iron Shoes.

To take in 3ft.—One Cramp ...	...	21/-
,, ,, Two Cramps	...	40/-
To take in 4ft.—One Cramp...	...	23/6
,, ,, Two Cramps	...	45/-
To take in 5ft.—One Cramp...	...	27/6
,, ,, Two Cramps	...	54/-

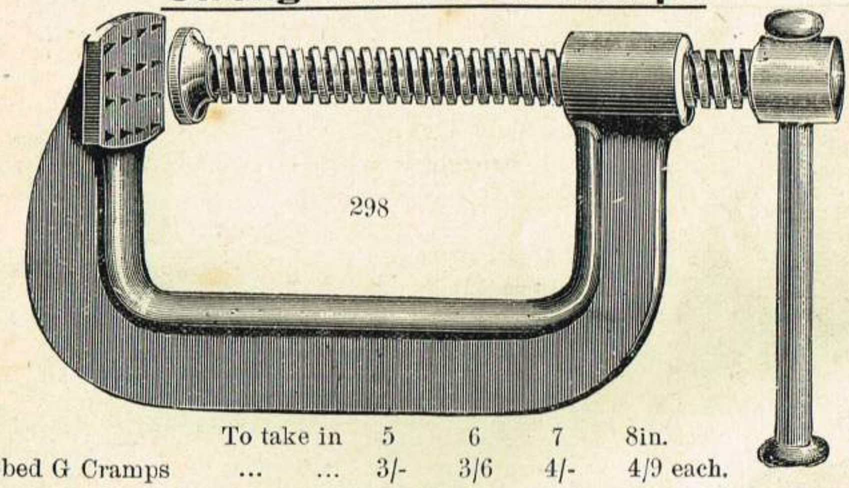
Ekes for same, 3ft., 10/- each.

Over 3ft., 3/- per foot.



297

Strong Ribbed G. Cramps.

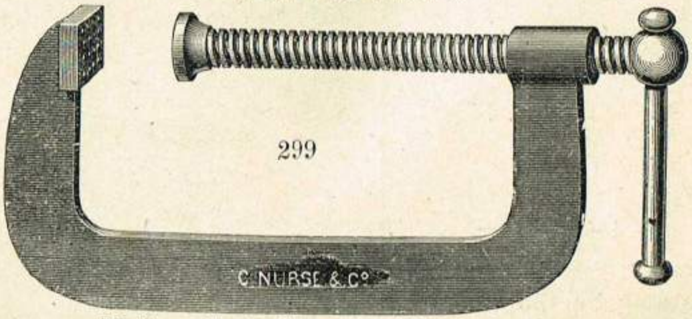


298

			To take in	5	6	7	8in.
298 Strong Ribbed G Cramps	...	...		3/-	3/6	4/-	4/9 each.

Strong G. Cramp.

With Vice Handle.

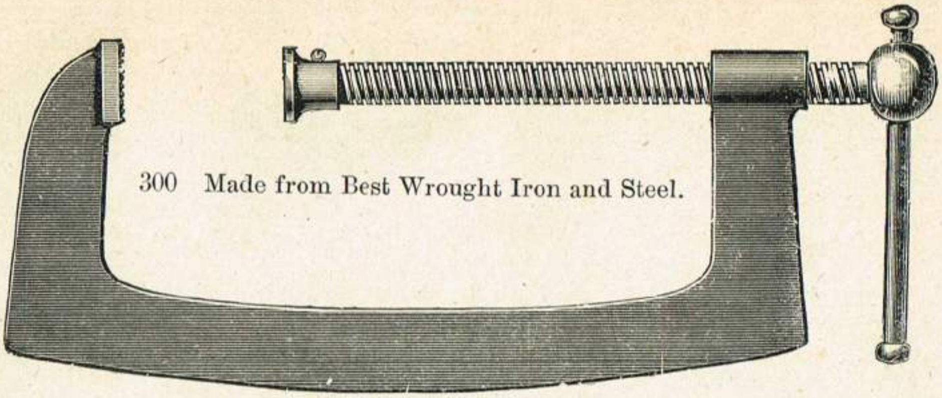


299

Made entirely from Best Wrought Iron.

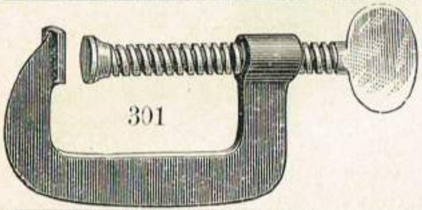
To take in	...	...	...	6	7	8	10	12in.
Made from Iron	...	...	...	$1\frac{1}{2}$ by $\frac{3}{8}$	$1\frac{1}{2}$ by $\frac{3}{8}$	$1\frac{3}{4}$ by $\frac{3}{8}$	2 by $\frac{3}{8}$	2 by $\frac{1}{2}$in.
Diameter of Screw	...	...	...	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{15}{16}$in.
Price No. 299 ...	...	...	...	5/-	5/6	6/9	8/-	9/3 each.

Coachmakers' Cramp.



300 Made from Best Wrought Iron and Steel.

To take in	12	14	16	18in.
Made from Iron	2¼ by ½	2½ by ½	2½ by ⅝	2¾ by ⅝in.
Diameter of Screw ...	1⅛	1⅛	1¼	1¼in.
Price	11/6	13/6	15/6	18/- each.



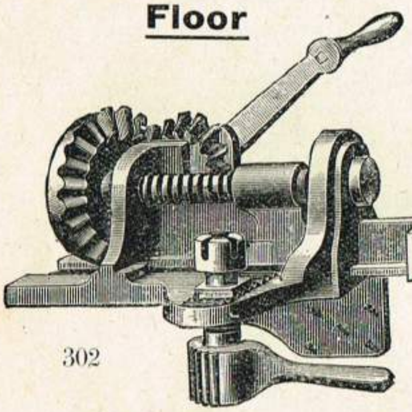
301

Best Machine Cut Square Thread Cramps.

301

To take in ...	2	3	4	5	6	7	8in.
Price	1/2	1/5	1/8	2/-	2/6	3/-	3/9 each.

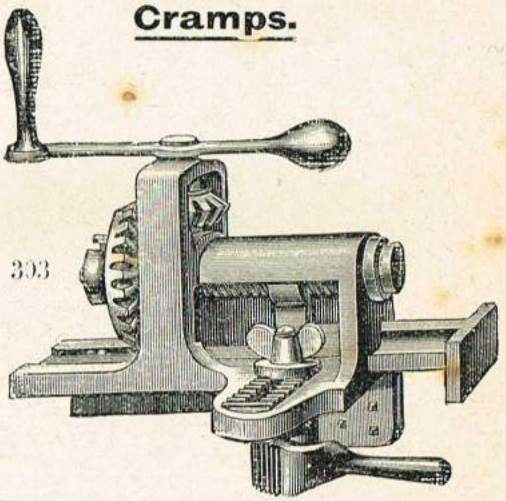
Floor Cramps.



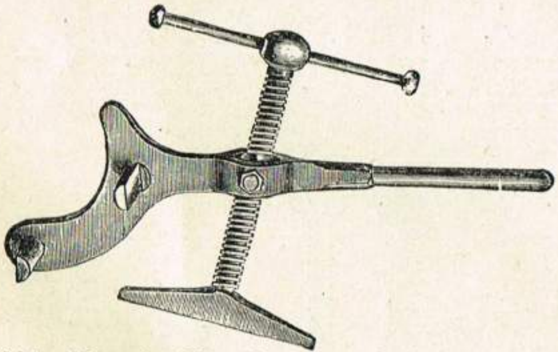
302

302 Bissell's Pattern Floor Cramp, Best Malleable Iron with Wrought Iron Screw, 15/6 each.

303 Improved Pattern Malleable Floor Cramp with Handle on Top, 17/6 each.



303

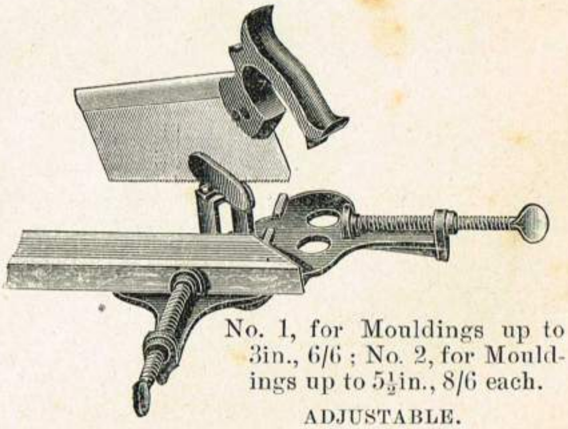


304 Wrought Floor Cramps, 15/- per pair.

Picture Framing made easy by the use of our Patent Double Cramp and Mitre Combined, which will admit any size saw. This will cut a true Mitre and Cramp Corners for glueing and nailing; can also be used for cutting Piping or anything requiring a true Mitre.

Double Cramp and Adjustable Mitre.

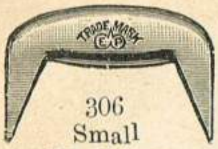
305 In two sizes, taking up to 5½in. moulding.

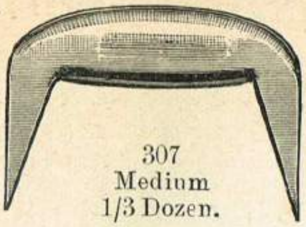


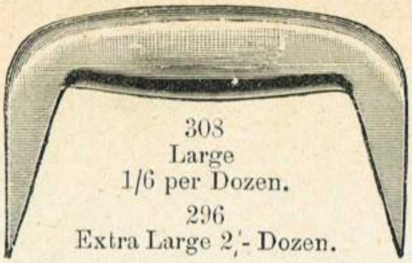
No. 1, for Mouldings up to 3in., 6/6; No. 2, for Mouldings up to 5½in., 8/6 each.

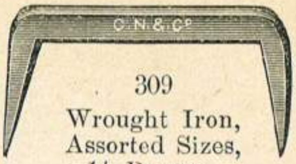
ADJUSTABLE.

Improved Malleable Iron Joiners' Dogs, or Joint Cramps (DRAWN FULL SIZE).

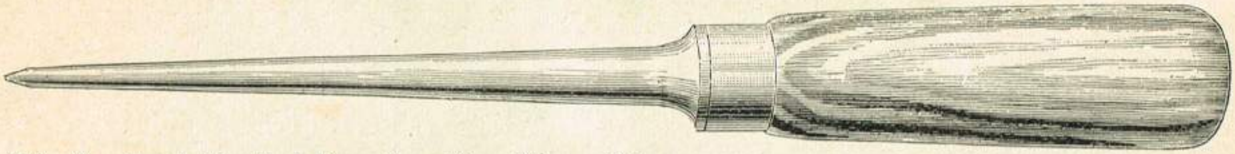

306
Small
10d. Dozen.


307
Medium
1/3 Dozen.


308
Large
1/6 per Dozen.
296
Extra Large 2/- Dozen.


309
Wrought Iron,
Assorted Sizes,
1/- Dozen ;
1/3 Dozen, Post Free.

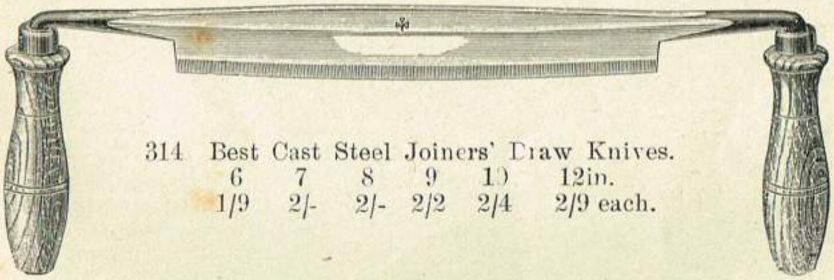
Draw Bore Pins.



310 9in. Beech Handled Draw Bore Pins, 2/6 per Pair.
311 9in. Boxwood Handled Ditto 3/- „ „

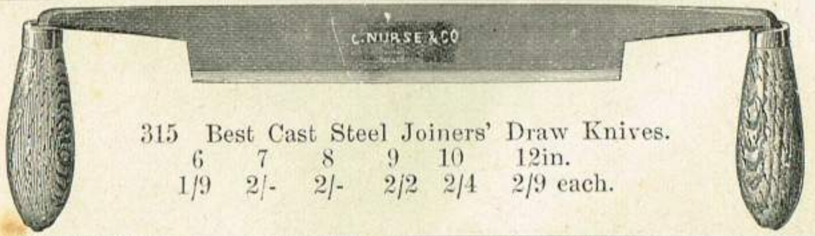
312 7in. by ¼in. Coachmakers' Draw Bore Pins, 3/6 per Dozen.
313 7in. by $\frac{5}{16}$in. Ditto Ditto 3/9 „ „

Draw Knives.



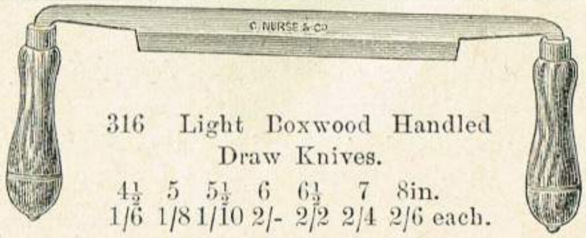
314 Best Cast Steel Joiners' Draw Knives.

6	7	8	9	10	12in.
1/9	2/-	2/-	2/2	2/4	2/9 each.



315 Best Cast Steel Joiners' Draw Knives.

6	7	8	9	10	12in.
1/9	2/-	2/-	2/2	2/4	2/9 each.



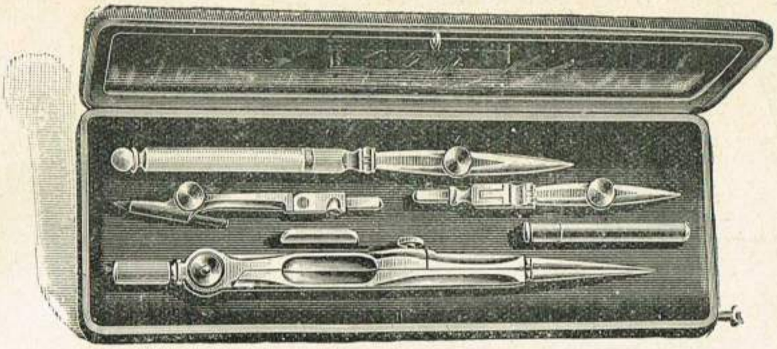
316 Light Boxwood Handled Draw Knives.

4½	5	5½	6	6½	7	8in.
1/6	1/8	1/10	2/-	2/2	2/4	2/6 each.

CASH WITH ORDER,—All goods must be accompanied by Cheque, Post-Office Order, or Postal Note, or the goods cannot be forwarded. Our nearest Post-Office is No. 227, Walworth Road ; but to ensure the safety of remittances, customers are particularly requested to cross all Cheques, Post-Office Orders, or Postal Notes—

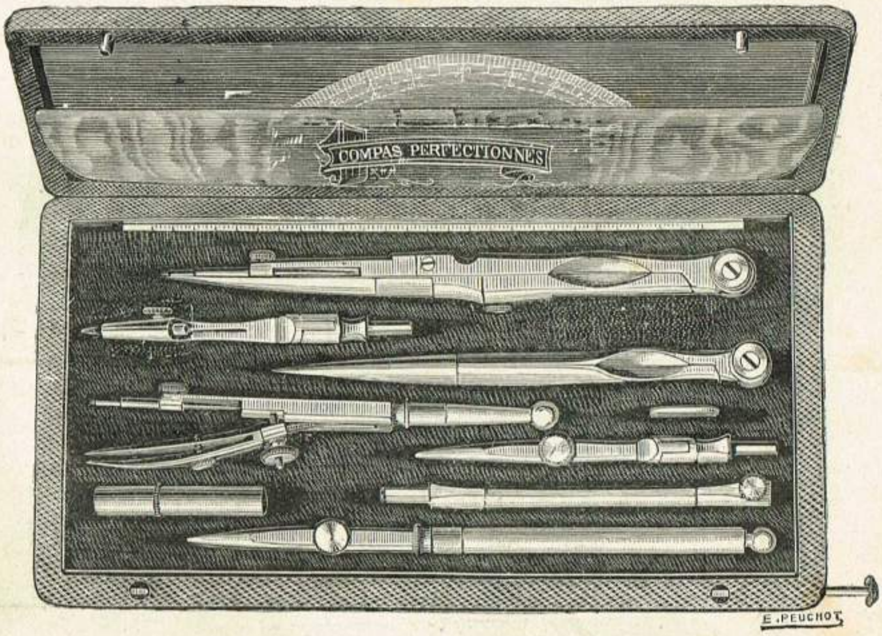
LONDON AND MIDLAND BANK, A/C OF CHARLES NURSE AND CO.

Drawing Instruments and Artists' Materials, etc.



317	Pocket Cases containing Compasses, Pen Point and Pencil Point	2/6
318	Ditto, better finished and containing 4¾in. Compass with Pen and Pencil Point, Drawing Pen and Reserve Leads	4/6
319	Ditto, Stronger Make, and with Needle Points	6/6

Cloth-Covered Pocket Cases, Long Form, with Rod Fastener.



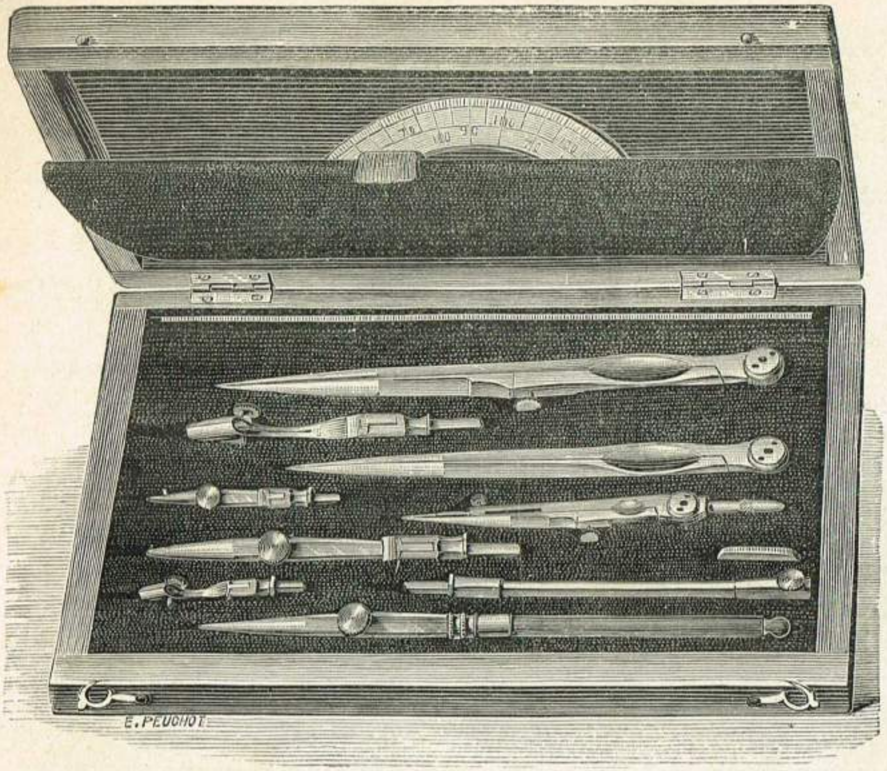
320 Compass 4¾in. with changing points, Spring Bow Compass, Drawing Pen with Bone Handle, Reserve Case for Leads, Bone Rule and Protractor, 7/6.

321 Compass 4¾in. with changing points, Pair of Dividers 4in., English Pattern Spring Bow Pen, Drawing Pen with Bone Handle, Reserve Case for Leads, Bone Rule and Protractor, as Illustration, 9/6.

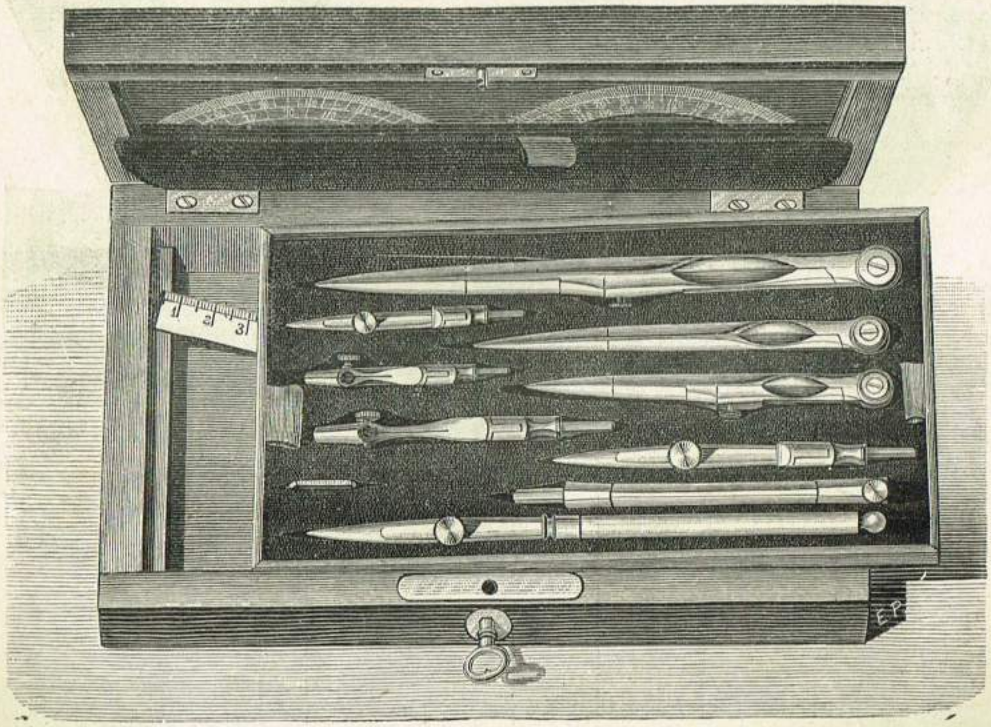
322 Compass 5½in. with changing points, Pair of Dividers 4¾in., Proportional Compass 6in., Spring Bow Compass, Drawing Pen with Bone Handle, Reserve Case for Leads, Bone Rule and Protractor, Leather Covered Case, 12/6.

323 Compass 5½in. with changing points, Pair of Dividers 4¾in., Proportional Compass 6in., Spring Bow Compass, 2 Drawing Pens with Bone Handles, Reserve Case for Leads, Bone Rule and Protractor, German Silver Instruments, and Leather Covered Case, 15/-

Cases of Drawing Instruments.

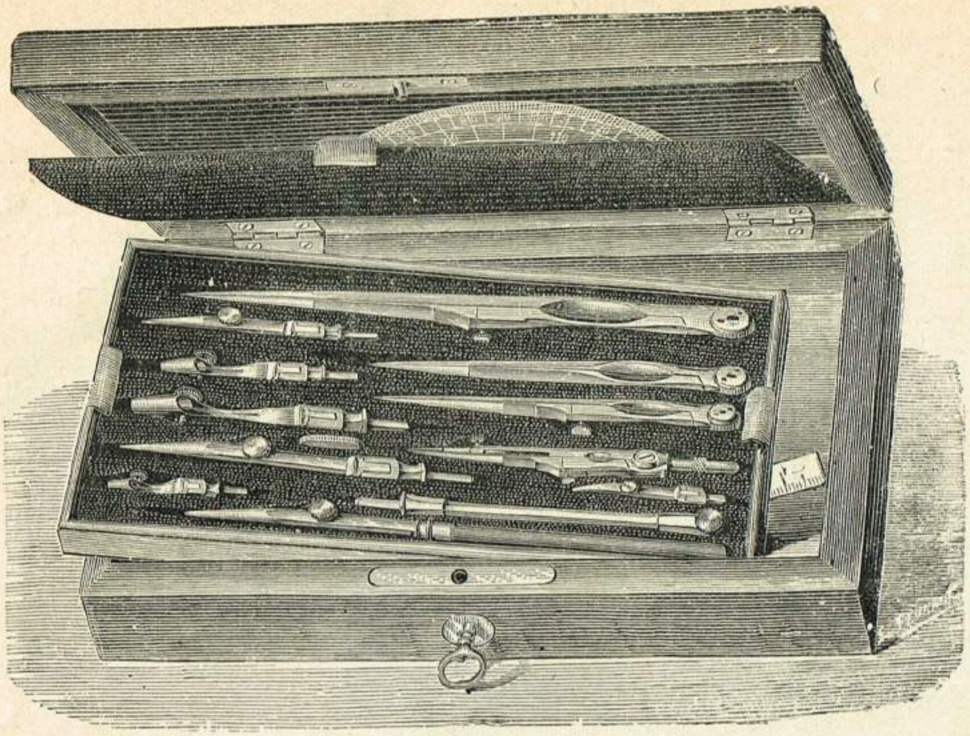


324 Rosewood Cases of French-made Drawing Instruments containing Instruments as follow—Pair of Compasses, Pen and Pencil Points, Bow Compass with Pen and Pencil Points, Pair of Dividers, and Drawing Pen, 4/6.



325 Rosewood Case, fitted with Tray, Lock and Key, containing 1 pair 5½in. Compasses with Pen and Pencil Points, pair of 4¾in. Dividers, Bow Compass with Pen and Pencil Points. Bone Handled Drawing Pen, Rule and Protractor, 5/6.

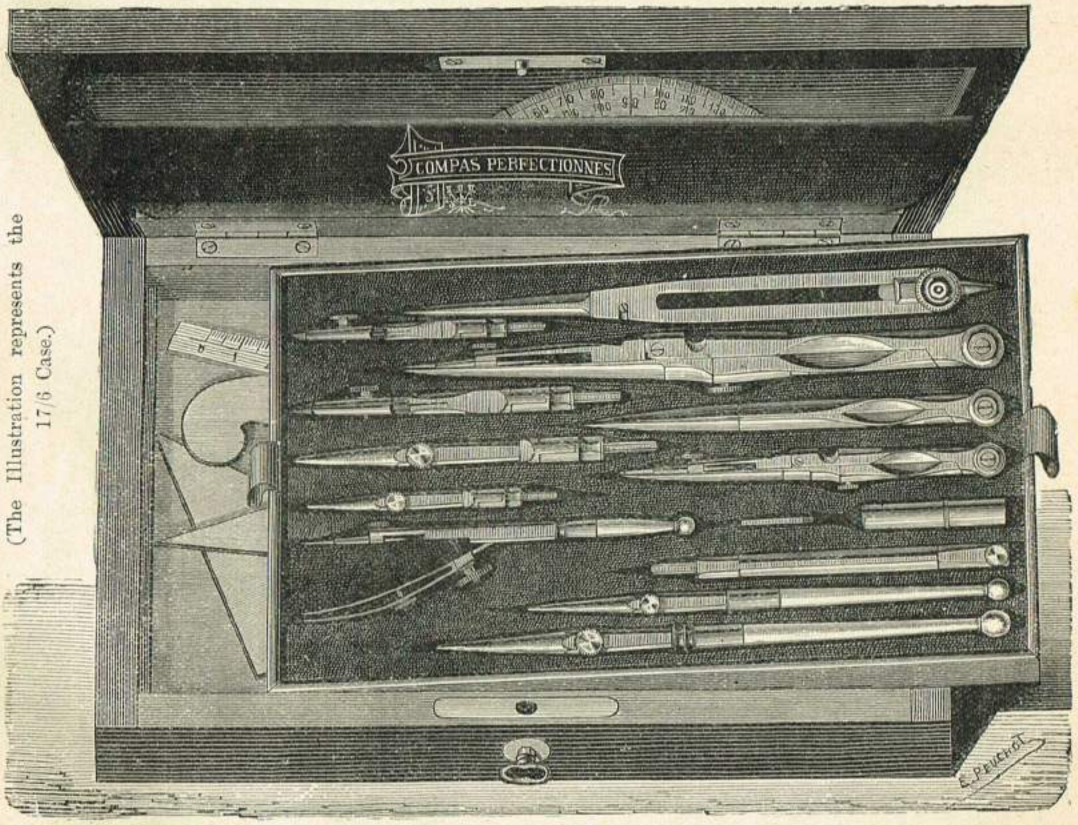
326 Rosewood Case similar to above, but with 2 Pairs of Compasses and 2 Protractors. Compasses are 6¼in. and 4in, 6/6.



327 Rosewood Case fitted with Tray, Lock, and Key, containing 1 pair Compasses each 6¼ and 4in. with Pen and Pencil Points, 4¾in. Dividers, Bow Compass with Pen and Pencil Points, Drawing Pen, Rule and 2 Protractors, 7/6.

328 Rosewood Case as above containing 1 pair 5½in. Compasses with Pen and Pencil Points, 4¾in. Dividers, Bow Compass with Pen and Pencil Points, Proportional Compass 6¾in. Drawing Pen, Rule and 1 Protractor, 8/6.

329 Rosewood Case as above containing 2 Pair Compasses 5½in. and 4in. with Round Points to Compasses, 4¾in. Dividers, Proportional Compass 6¼in. 3 English Pattern Spring Bow Compasses, Drawing Pen, Rule and 2 Protractors, German Silver Instruments, 20/-.



(The Illustration represents the 17/6 Case.)

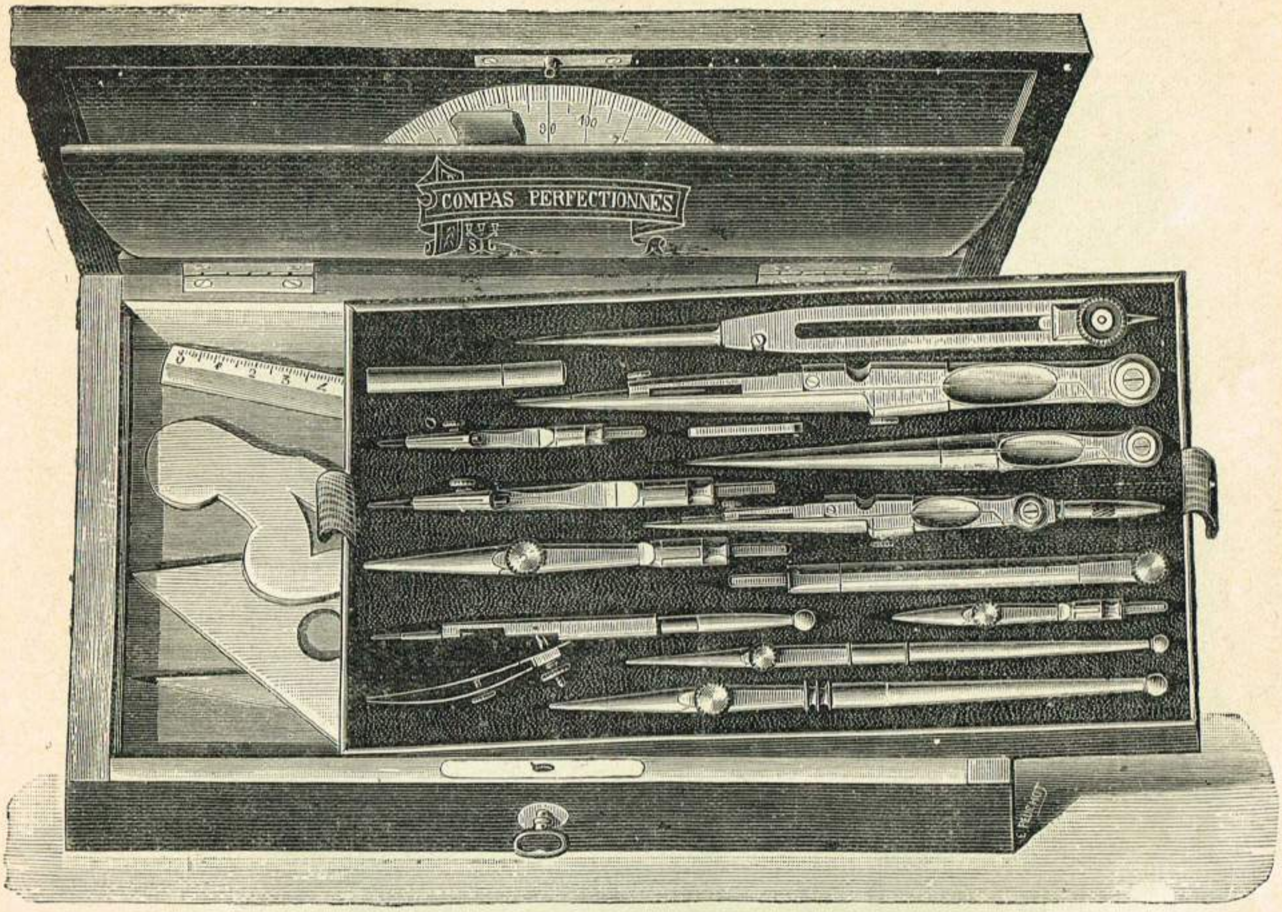
330 Rosewood Case with Tray, Lock and Key, containing 1 Pair Compasses 6¼in., with Pen and Pencil Points, Pair of Dividers 4¾in. Spring Bow Compass, Drawing Pen, Reserve Case of Leads, Protractor and Rule, 10/6.

331 Similar Case, but with 1 Pair Compasses each, 4in. and 6¼in., with Round Point Compasses and English Pattern Bow Pen, 12/6.

332 Case as Illustration with Proportional Compass 6¼in., two Drawing Pens, two Squares and Curve, 17/6.

Drawing Instruments.

Extra Fine Quality Compasses.



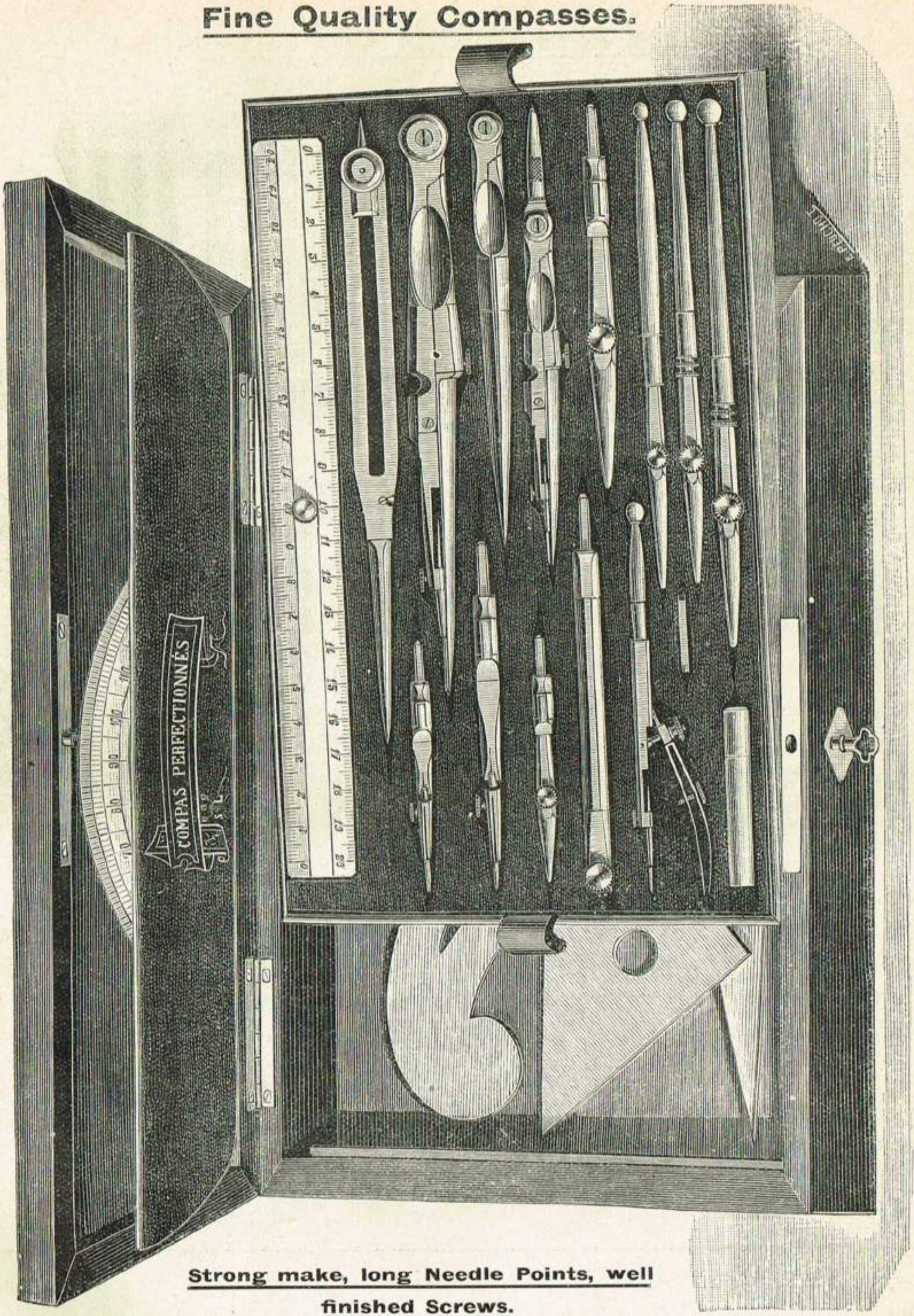
333 Rosewood Cases with Lock and Key, Tray and Name Plate, 2 Metal Fillets and Inlaid Rosewood Border, containing, Compasses 6¼in. with Changing Points, 4½in. Dividers, 5¼in. Bow Compass, with Changing Points, Spring Bow Compass, 2 Drawing Pens with Ivory Handles, Ivory Reserve Case for Leads, Horn Protractor, 2 Squares, Curve and Rule. German Silver Instruments, 27/6.

334 Rosewood Cases (as Illustration), with Lock and Key, Tray and Name Plate, 2 Metal Fillets and Inlaid Rosewood Border, containing 6⅝in. Compasses, with Pen and Pencil Points, 4¾in. Dividers, 5½in. Bow Compasses with Pen and Pencil Points, Spring Bow Compass, 6⅝in Proportional Compass, 2 Drawing Pens, with Ivory Handles, Ivory Reserve Case for Leads, Horn Protractor, 2 Squares and Curve, Best German Silver Instruments, 37/6.

Carriage.—We will pay Carriage on all orders of £1 and upwards to any Railway Station in England or Wales. Carriage will be paid to any Railway Station in Scotland, Ireland, or the Channel Islands, on orders of £2 and upwards, except only in the case of Grindstones, Machinery, and Vices, which are specially marked in List as being sent Carriage Forward.

Parcels Post.—For small parcels this offers a cheap and expeditious manner of delivery. The charges are 3d. for the first pound, and 1d. for subsequent pounds up to the limit of eleven pounds.

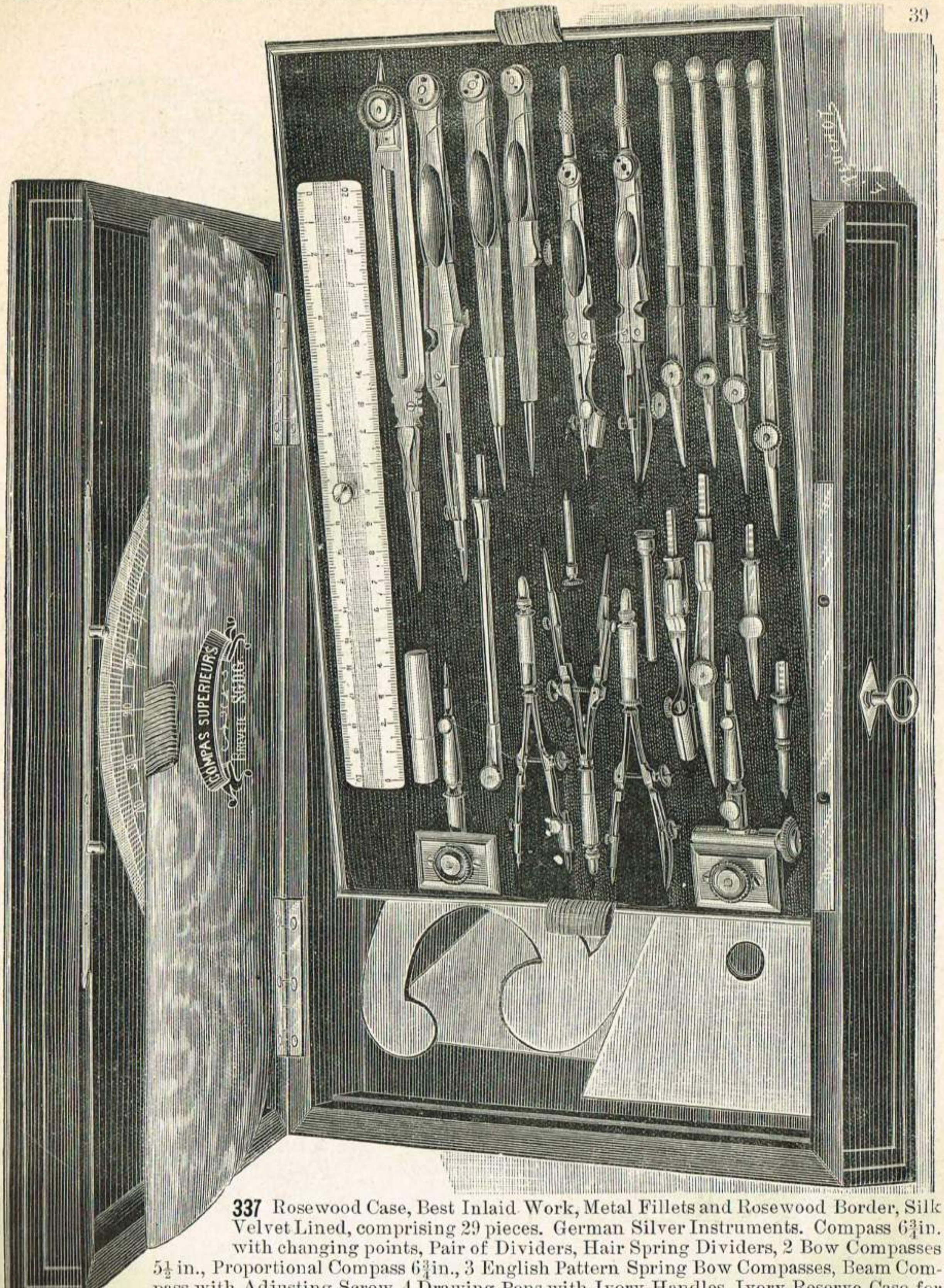
Fine Quality Compasses.



Strong make, long Needle Points, well finished Screws.

335 Rosewood Cases, with Lock and Key, Tray and Name Plate, with 3 Brass Fillets and Rosewood Border on Lid. Compasses 6⅜in., with Changing Points, Pair of Dividers 4¾in., Bow Compass 5½in., with Changing Points, Spring Bow Compass, Proportional Compass 6⅜in., 3 Drawing Pens, with Ivory Handles, Double Edge Divided Flat Ivory Scale, Ivory Reserve Case for Leads, Horn Protector 8½in., 2 Squares and Curve. German Silver Instruments. Price **42/-.**

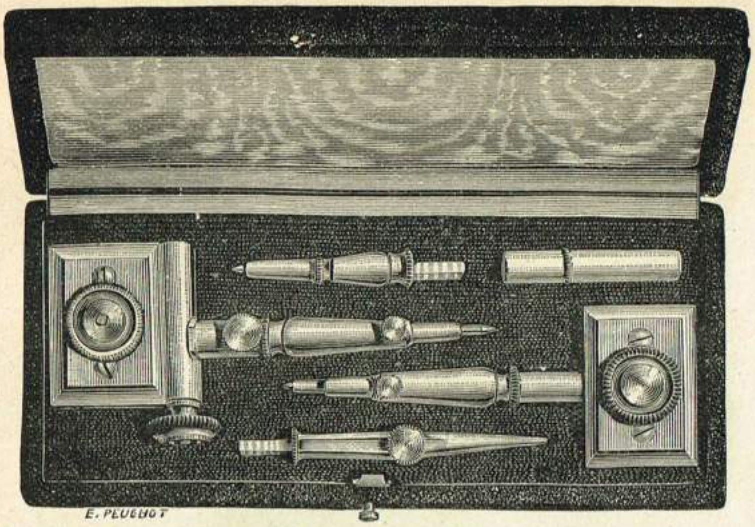
326 Same as above, but with 3 English Pattern Spring Bows. Price **50/-.**



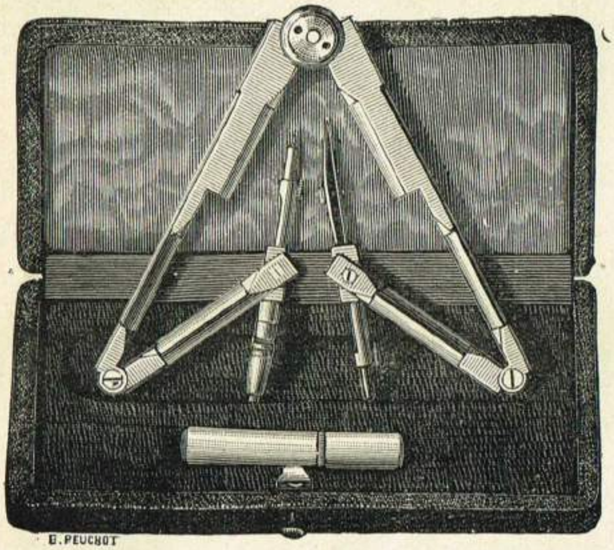
337 Rosewood Case, Best Inlaid Work, Metal Fillets and Rosewood Border, Silk Velvet Lined, comprising 29 pieces. German Silver Instruments. Compass $6\frac{3}{4}$in. with changing points, Pair of Dividers, Hair Spring Dividers, 2 Bow Compasses $5\frac{1}{2}$ in., Proportional Compass $6\frac{3}{4}$in., 3 English Pattern Spring Bow Compasses, Beam Compass with Adjusting Screw, 4 Drawing Pens with Ivory Handles, Ivory Reserve Case for Leads, Double Edge Divided Ivory Scale 8in., Horn Protractor $8\frac{1}{2}$in. divided to $\frac{1}{2}$ degrees, 2 Squares and Curve. Price 90/-

338 Rosewood Case, $13\frac{3}{4}$ by 10 in., very best Inlaid Work on Lid, 4 Metal Fillets and Rosewood Border, Brass Lock and Hinges, Lyons Silk Velvet, comprising 33 pieces. German Silver Instruments. Compass 7in. with changing points, needle pointed Pair of Dividers $5\frac{1}{2}$ in., Hair Spring Dividers, 2 Bow Compasses, $5\frac{1}{2}$in., Proportional Compass $6\frac{3}{4}$in., 3 Spring Bow Compasses, English Pattern, Beam Compass, 4 Drawing Pens with Ivory Handles, Road Pen with Spring Adjustment, Watch Form Pocket Compass with Lid, Ivory Reserve Case for Leads, Double Edge Divided Ivory Scale 8in., Horn Protractor $8\frac{1}{2}$in. divided to $\frac{1}{2}$ degrees, Rule, 3 Squares, and Curve Ebony. Price 120/-

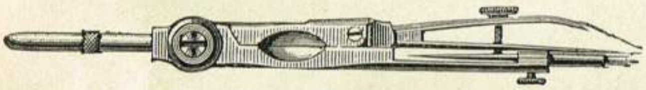
Drawing Instruments, etc.—*continued.*



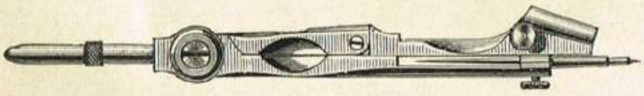
339 Best Quality Beam Compasses with extra pieces and adjusting screw, 12/6.



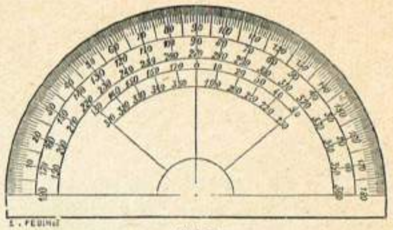
340 Superior German Silver Pocket Napier Compass, Needle Points, 12/6.



341



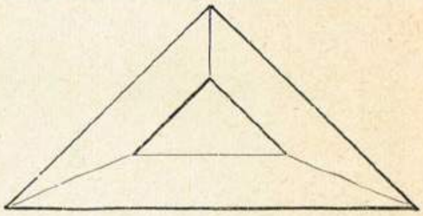
342



348

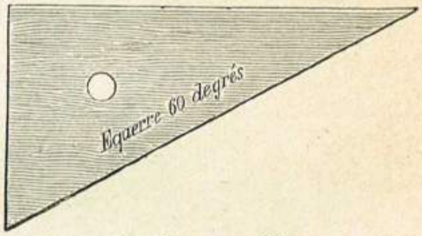
Semi-circular Horn Protractors 5in. 9d, 6in. 1/-, 7in. 1/3 each.

Ditto in German Silver 4in. 1/3, 5in. 1/9, 6in. 2/3, 7in. 2/9.



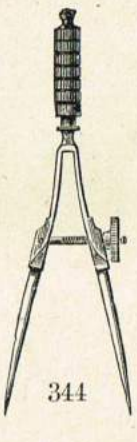
Set Squares 45°

		4	6	8	10in.
349	Best Pear	3d.	4d.	5d.	
350	Celluloid (Transparent)	9d.	1/4	1/8	2/3

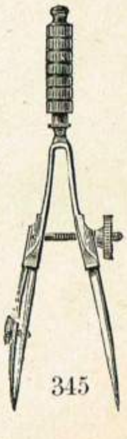


Set Squares 60°

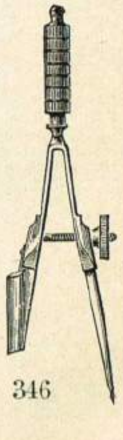
		6	8	10in.
351	Best Pear	3d.	4d.	5d.
352	Celluloid (Transparent)	1/3	1/6	2/-



344



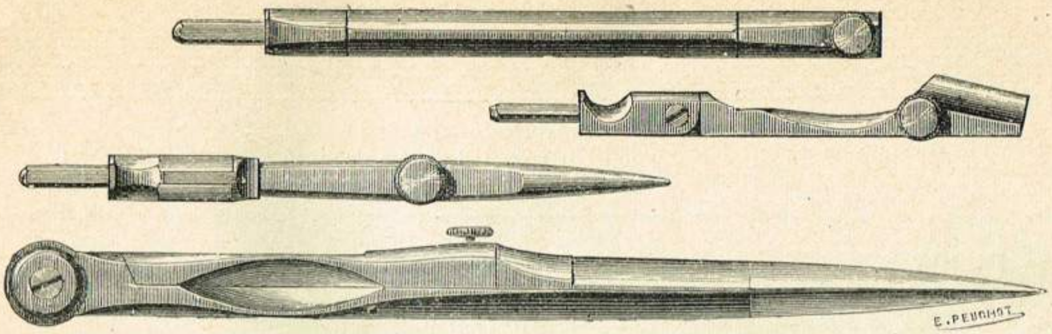
345



346

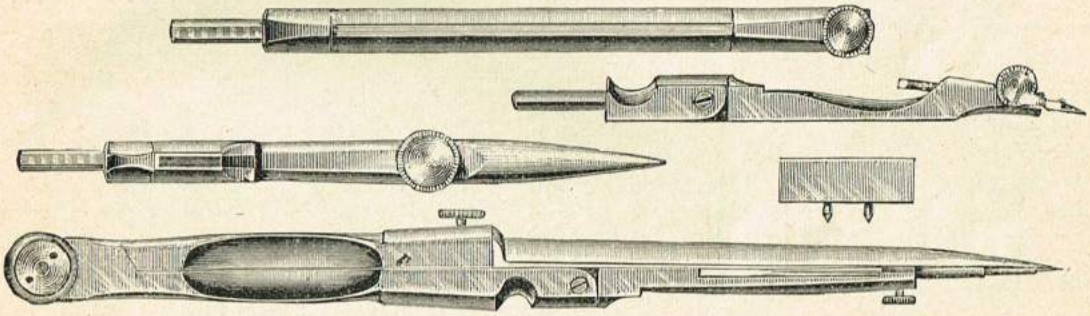
341	Bow Pen Compasses, Good Quality	1/6
342	Bow Pencil Compasses, Good Quality	1/6
343	Bow Compasses in German Silver, Best Steel Joints, Either Dividers, or Pen or Pencil Compasses	3/6
344	Spring Bow Dividers, Best Quality, Needle Points	3/6
345	Ditto Pen Ditto Ditto	3/6
346	Ditto Pencil Ditto Ditto	3/6
347	Sets of 3, Nos. 345 to 347, in Best Case	11/6

Drawing Instruments, etc.—*continued.*



353 Half-Sets of Drawing Instruments, Good Quality, Well Finished, 4½in. 1/3, 5½in. 1/6, 6½in. 2/-

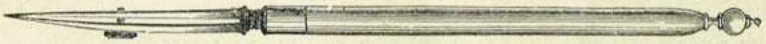
Half-Sets of Compasses, Needle Pointed.



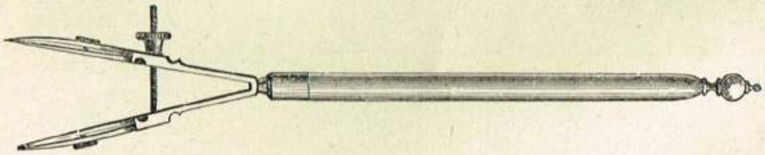
354 Best Quality Screw-Jointed, German Silver, Rounded Hollows, 4½in. 3/6, 5½in. 4/-, 6½in. 4/6.

Drawing Pens.

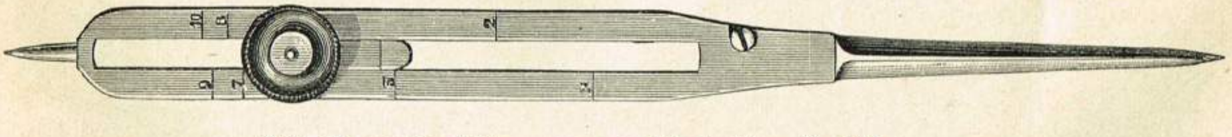
355 & 356



357



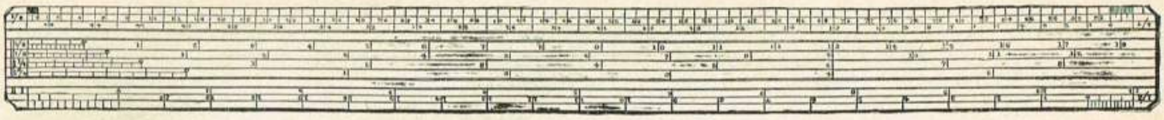
355 Bone Handle Drawing Pens, 9d., 1/-, 1/3.
356 Ivory Handle Drawing Pens, 2/-, 2/6, 3/-.
357 Ivory Handle Road Pen, in German Silver, 5/- each.
358 Ditto Road Pencil, in German Silver, 5/- each.



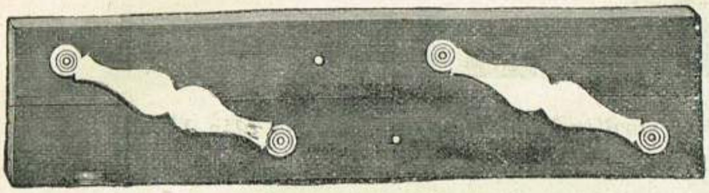
359 Proportional Compasses, as Illustration, 3/-, 4/6.
360 Ditto, with Rack Adjustment, 7/6, 8/6.
361 Ditto, with Rack Adjustment and Hooked Points, 10/-, 11/6.

PARCEL POST.—Where small articles only are required, this is a most convenient and economical mode of transit. The scale of charges is 3d. for the first pound and 1d. for every subsequent pound up to 11lb. Customers are requested to enclose the cost of postage with small orders; if too much is sent, we will either return stamps to balance, or enclose some small article to make up the full value.

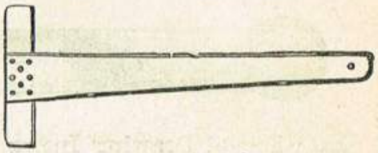
Drawing Instruments, etc.—*continued.*



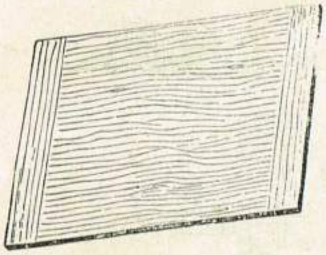
362 12in. Boxwood Universal Scale—Special Line—1/-
363 12in. Best Boxwood Universal Builders' Scales, 16 scales, 1/6 each.
364 Paper Scales, 12in. Set of 8 Scales in Case, 1/- per set.



	6	9	12	15	18in.
365 Ebony Parallel Rules	6d.	1/-	1/6	2/-	2/6 each.

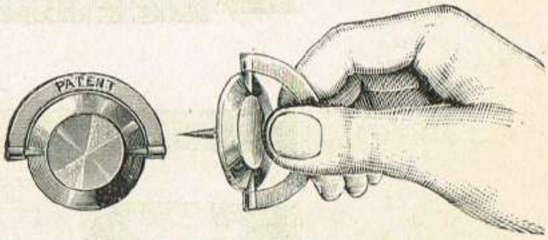


	12	15	18	21	24	30in.
366 Best Pearwood T Squares.	9d.	1/-	1/4	1/8	2/-	3/- each.
367 Best Mahogany with Ebony Edge.			3/6		4/6	5/- each.

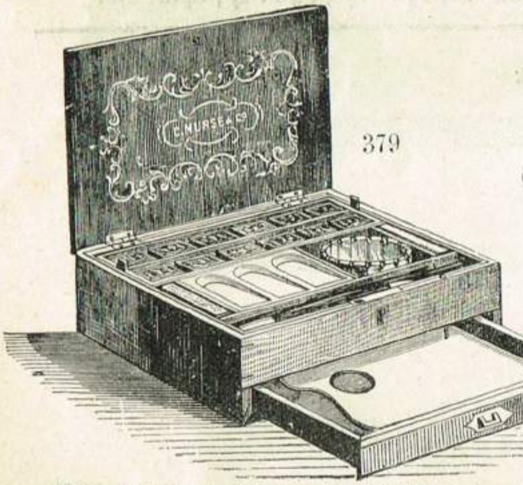


368 369
Drawing Boards :—

Size	368 Deal Clamped	369 Deal Panelled
15 by 11in.	1/6	2/6
18 by 11½in.	1/9	—
19 by 13½in.	2/-	3/6
22 by 15½in.	2/6	4/6
28 by 19in.	4/6	6/6

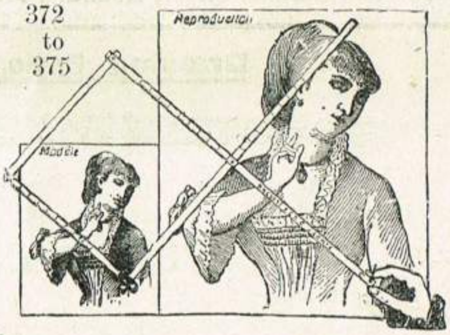


370 Improved Drawing Pins, 6d. per doz.
371 Brass Drawing Pins, 6d., 8d., 10d. per doz.



379

372
to
375



372 Pentagraphs, Hardwood, 1/- each.
373 Ditto, Pearwood, with Metal Fittings, 2/-
374 Polished Boxwood with Superior Metal Mountings, 5/-
375 Full sized Ebony ditto, 7/6 each.

Mahogany Boxes of Superior Water-Colours :—

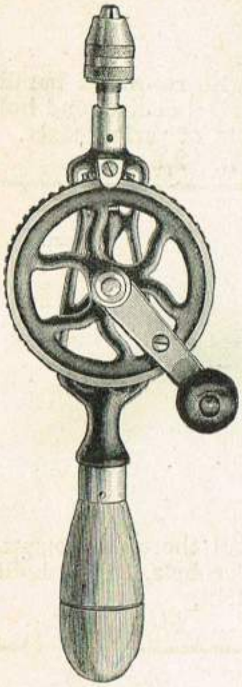
376 12 Half-cake Mahogany Colour Box, containing Brushes, Pencils, Water Glass, &c., 10/6
377 18 Half-cake ditto, 15/-
378 24 Half-cake ditto, complete with Drawer and Palette, 30/-
379 12 Cake Handsome Rosewood Caddy Lid Box, Brass Bound, containing Ink Stone, Palette, Water Glass, Sable and other Brushes, Pencils, &c., 50/-

380 Waterproof Drawing Inks can be had in any of the following Colours :— Black, Blue, Brown, Carmine, Crimson, Green, Orange, Scarlet, Yellow, Vermilion, Indigo, or Violet, 1/- per bottle. These Colours can be used for Lines or Washes, and are Waterproof when dry.

Any description of Drawing Instruments, Artists' Materials, Oil or Water Colours, &c., &c., supplied to order at most reasonable prices for Best Quality Goods.

Drills.

Goodell's Improved Hand Drills.



381 No. 4½ G.

Capacity 0 to $\frac{5}{32}$in.

Chuck Patented August 13, 1895.

The general features of this Drill are shown by the illustration; it has a polished Wood Handle with Screw Cap, the same being used as a receptacle for the eight Drill Points furnished with it.

HANDLE. — Polished Cocobolo with Screw Cap.

FRAME. — Malleable Iron, well Japanned.

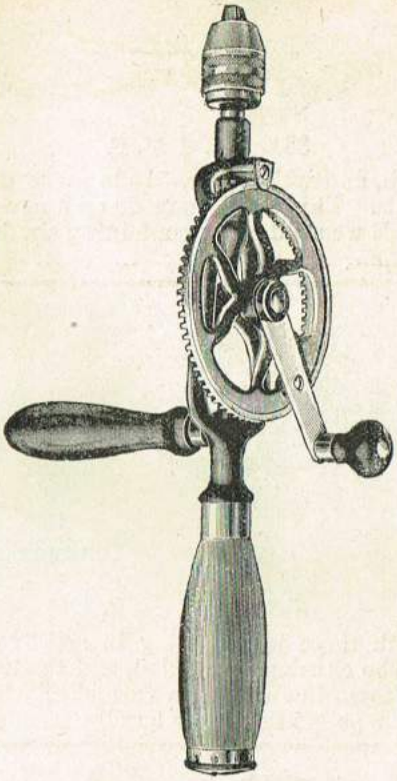
GEARS.—Cut Teeth, Nickel Plated.

GUARD. — Both Gears are held together by a steel guard, having every advantage of a Double Geared Drill.

CHUCK. — Three Jawed; capacity 0 to $\frac{5}{32}$in. It has Knurled Nut, Nickel Plated, and is well made and accurate. Will hold any Twist Drill from $\frac{5}{32}$in. to No. 80.

EQUIPMENT.—Eight Fluted Drill Points are furnished with each tool, all contained in the handle.

Price, **5/-** each.



382 No. 5 G.

Capacity 0 to ¼in.

Chuck Patented August 13, 1895.

This Drill has capacity to ¼in., and is correspondingly larger and heavier than No. 4½ G.

HANDLE. — Polished Hard Wood, with Patent Drill Receptacle.

EXTRA SIDE HANDLE. — Polished Hard Wood; can be removed at will.

FRAME.—Malleable Iron, well Japanned.

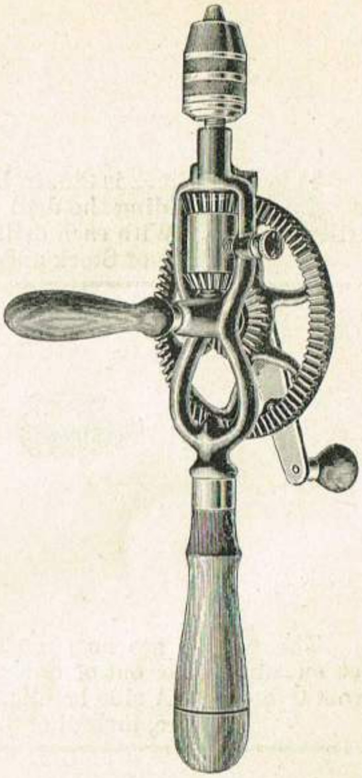
GEARS. — Cut Teeth, Nickel Plated.

GUARD.—Both Gears are held together by a steel guard, having every advantage of a Double Geared Drill.

CHUCK.—Three Jawed; capacity 0 to ¼in. It has Knurled Nut, Nickel Plated, and is well made and accurate. Will hold any Twist Drill from ¼in. to No. 80.

EQUIPMENT. — Eight Fluted Drill Points are furnished with each tool, all contained in the handle.

Price, **8/6** each.



383 No. 5½ G.

Capacity 0 to ⅜in.

Patented August 13, 1895; March 31, 1896.

This Drill embraces features never before used upon tools of this character, and is unquestionably the finest ever produced.

It has Double Gears, Two Speeds, and a Chuck, with capacity to ⅜in., as noted below.

FRAME. — Malleable Iron, Japanned.

HANDLE.— Polished Cocobolo, Screw Cap.

GEARS.—Cut Teeth.

SPEEDS.—It has Two Speeds, changed by turning the nut on the frame marked "F" and "S."

CHUCK.—Three Jawed; capacity 0 to ⅜in. It has Knurled Nut, Nickel Plated, well made and accurate.

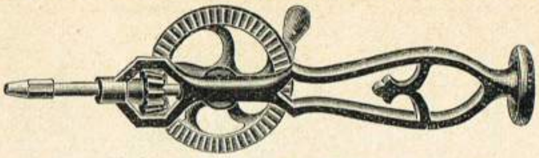
Spindle runs in a hardened steel cone bearing.

No Drill Points are furnished with this tool.

Price, **10/6** each.

Hand Drills—*continued.*

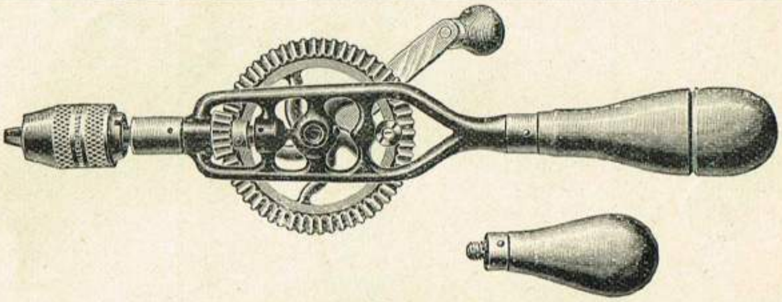
Millers' Falls Company's Hand Drills.



384 No. 4 M.F.

This Drill Stock is 8in. in length, and weighs 8oz. It is made of iron, with rosewood handle, and has chuck for holding the drill points. This chuck is made on a new plan, and it centres and holds the drill perfectly. With each drill stock we send a box containing six drill points, of various sizes.

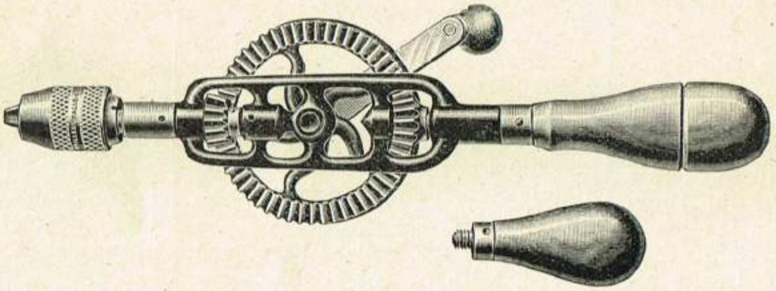
Price of Stock and Drills... ... ... 2/3 each.



385 No. 1 M.F.

These Drills are now made with three jaws, resting in solid sockets, and there are no springs to get out of place or out of order. The chucks are nickled, and the handles Cocobola. They hold drills from 0 to $\frac{3}{16}$in. A side handle, as shown in cut, is now furnished with this drill.

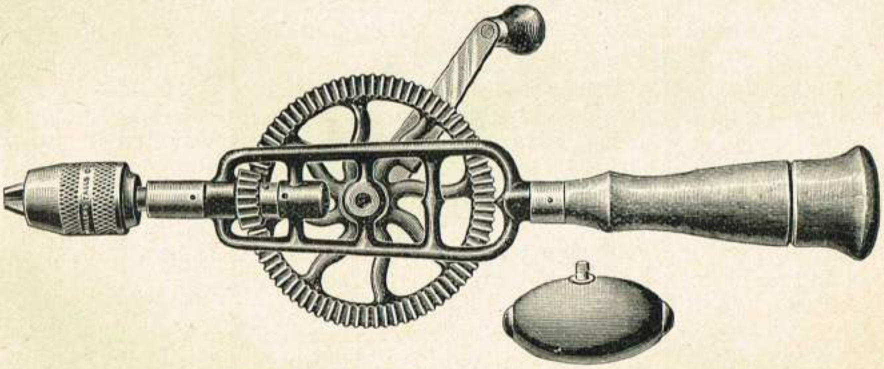
Price, including 8 fluted points in hollow handle ... ... 5/- each.



386 No. 5 M.F.

This Drill has same chuck as No. 1, but is doubled-geared, and is provided with a wide rim gear, to be grasped between thumb and fingers when the drill is used for delicate work. In this manner it can be run without liability of breaking points. Length over all, $11\frac{1}{2}$in.; weight, 20oz.

Price, including 8 fluted points ... ... 6/6 each.

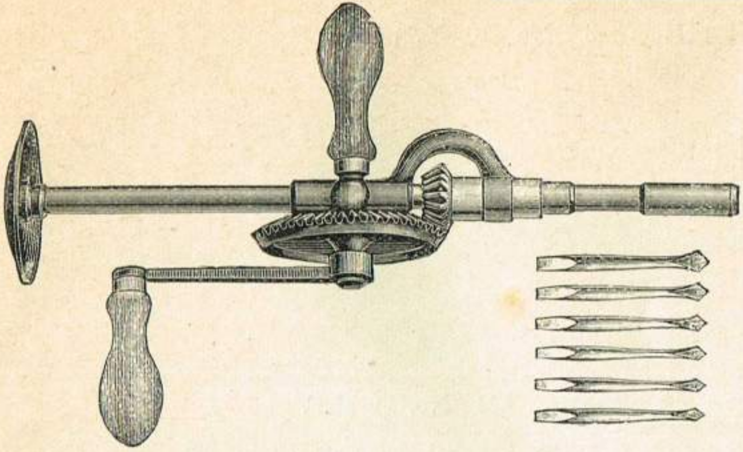


387 No. 2 M.F. Ball Bearing.

This Drill is same in general finish as No. 1, described above. It has cut gears and an adjustable friction roll to prevent gears from springing out of engagement. The chuck holds from 0 to $\frac{17}{64}$in.

Price, with 8 fluted points ... ... 10/6 each.

Breast Drills.

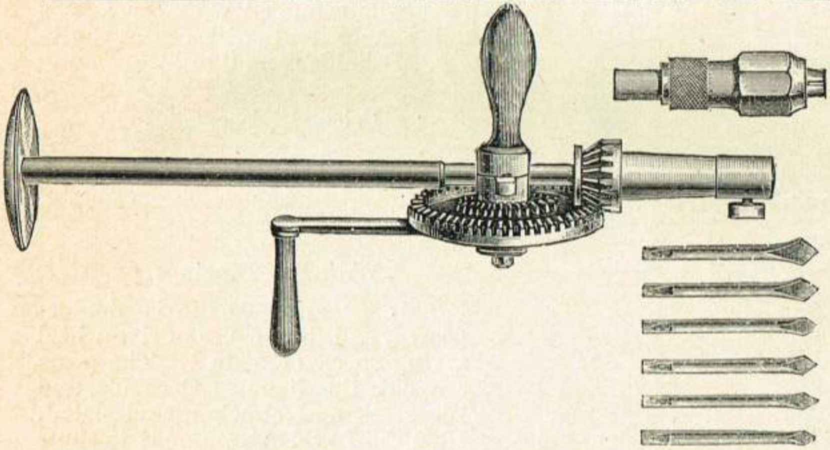


Breast Drills, with 6 Assorted Drills.

388 No. 1E. Length over all 13in. ... ... Price 4/9

389 No. 2E. Length over all 15in. ... ... Price 5/6

Black finish, with Beech Handles.



Improved Two-speed Breast Drills.

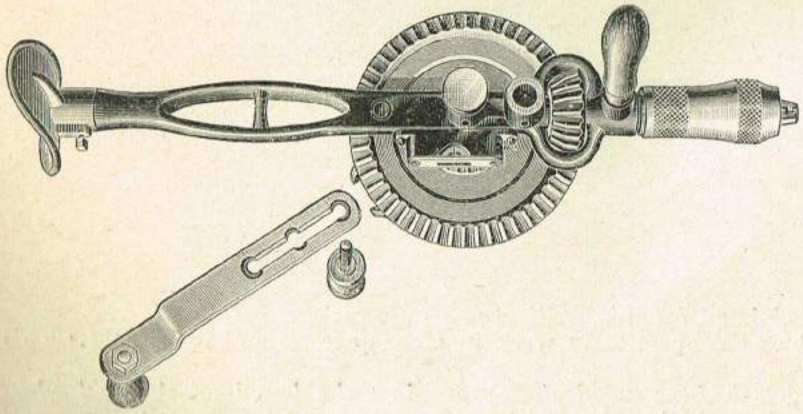
390 No. 3E. Finished bright throughout, metal handle, and fitted with 6 Drills ... 8/0

391 No. 4E. Ditto, as above, but fitted with self-adjusting Drill Chuck 10/6

Miller's Falls Breast Drill.

392 No. 12M.F. Ball Bearing.

Changeable gear from even, to speeded about 3 to 1.



This drill has been greatly improved recently. As now made the drive wheel is 5in. in diameter. The gears are cut from solid metal, and run almost absolutely perfect. A roller is placed at back of drive gear, which makes it equally as firm and substantial as a double geared drill. The crank is adjustable to three different lengths, and is held in place by a round head thumbscrew with milled edges, which give the drill an attractive appearance. The drive gear is held by a similar screw. The chuck is nickelled and has our new alligator jaws suitable for both round and square shanks. They hold from 5·64 up. The handles are cocobola. A new feature is the level attachment which enables the operator to see when the drill is being held true, and will be appreciated by good mechanics. Everything about the tool will be found durable and nicely finished.

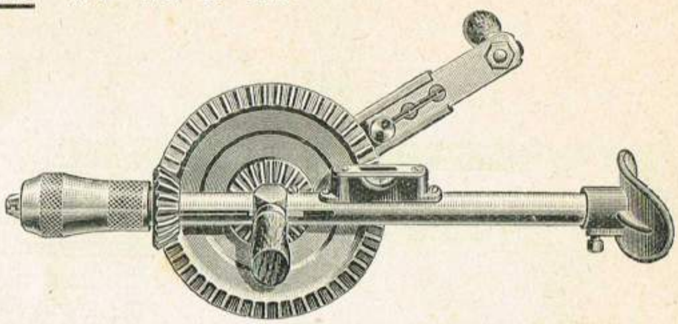
Price 10/6 each.

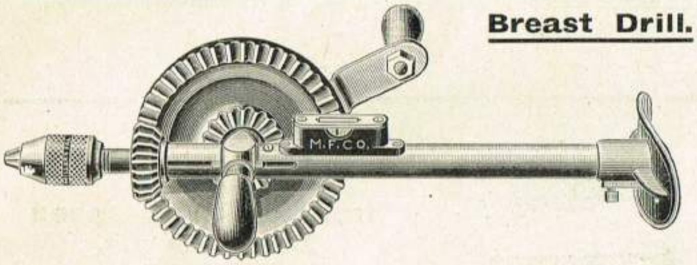
Breast Drills—*continued.*

Breast Drill. 393 No. 10 M.F.

With ball bearings, nickel-plated stock and chuck, Cocobola handles, extension crank, alligator jaws, which hold both round and square shanks, and a Patent Level Attachment to enable the operator to see when the tool is held true. The gears are cut and are changeable from even, to speeded 3 to 1.

Price, 12/6.



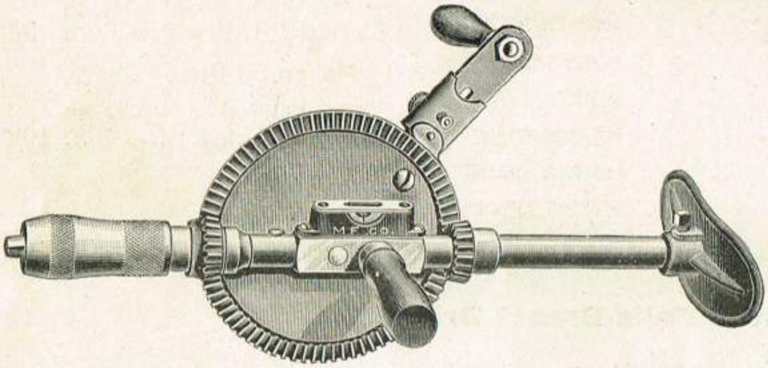


Breast Drill. 394 No. 11 M.F.

This Drill is same in finish as No. 10 M.F., but the chuck is arranged with three jaws for round shanks and will centre quite accurately. It holds from 0 to $\frac{17}{64}$in.

Price, 12/6.

Breast Drill. 395 No. 13 M.F.



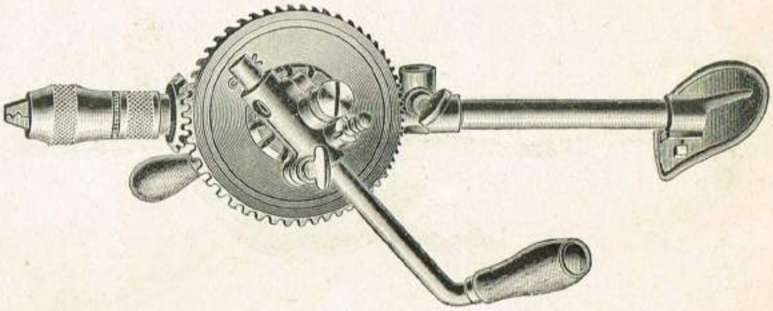
With Ball Bearings.

This superior Drill is double-geared, and has a 6in. drive-wheel giving speed at 4½ to 1. The gears are cut, the handles Cocobola, and the stock and chuck nickel-plated. Note the Level Attachment to show when the tool is being held true; and also that handle is now fitted with our improved extension crank.

Price, 17/-

Breast Drill. 396 No. 16 M.F.

The No. 16 Breast Drill is arranged with a Ratchet Attachment. The Frame is made in two lengths, the end section of which can be detached if the Drill is to be worked in a narrow space—as between joists, for instance—or it can be attached to the main Frame at right angles if desired.



The points of especial value claimed for this Drill are as follows:

The Ratchet Attachment enables the operator to work in close quarters and in corners. This Attachment also gives greater power.

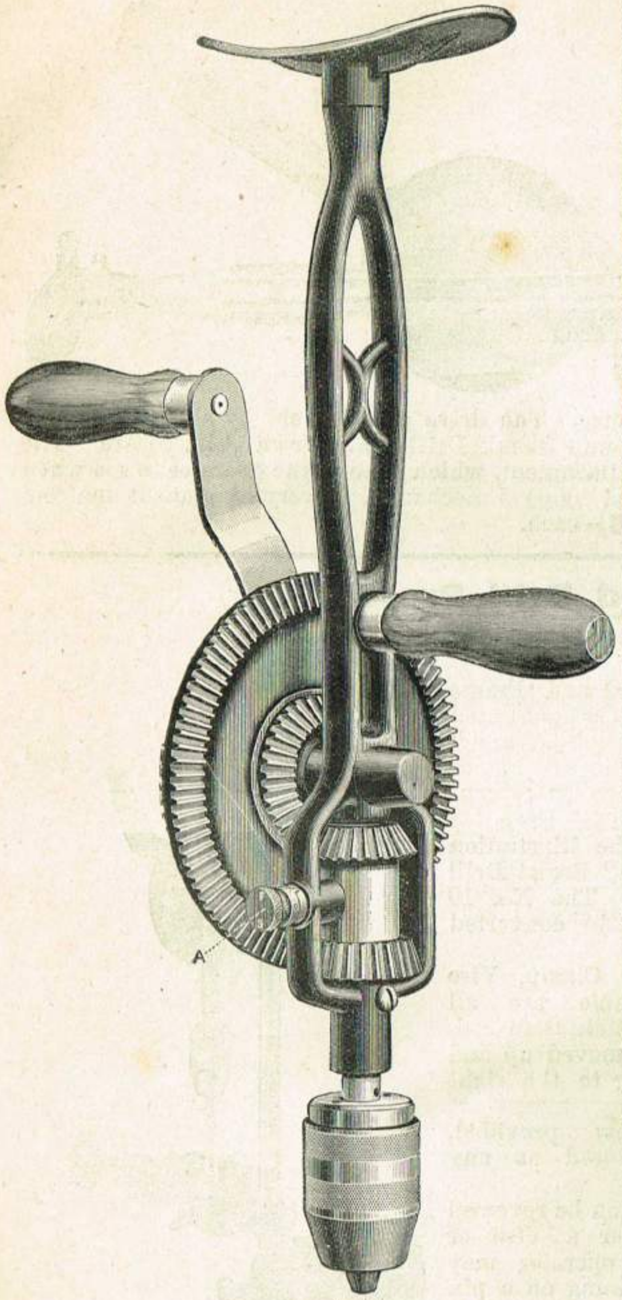
The sectional Frames can be detached (as stated above) to reduce the length of the tool when required, and the whole construction is such that the Drill can be taken apart and packed in small compass for carrying in the grip. This will be found an especially valuable Drill for the use of electricians, plumbers, &c.

Extreme diameter of Driving Wheel ... 5in.
Extreme diameter of Pinion ... ... 2in.

Arranged with two speeds.

Price, 18/6.

Goodell Breast Drill.



6—G.

397 The cut shows all the general features of this drill, its special ones we enumerate as follows :—

It has a Three-jawed Chuck, capacity 0 to ½in. is Double Geared, one gear remaining "idle" and acting as an anti-friction bearing when the other is at work.

All Gears have cut teeth. It has two speeds, and can be changed from fast to slow by turning the thumb nut at "A" until the letter representing desired speed is nearest the chuck.

The Breastplate is adjustable, and its position can be changed if desired.

The Spindle runs in a hardened steel cone bearing. Each Drill is packed in a box.

Price 12/6 each.

The McClellan Patent Corner Bit Brace and Drill.

Fig. 1

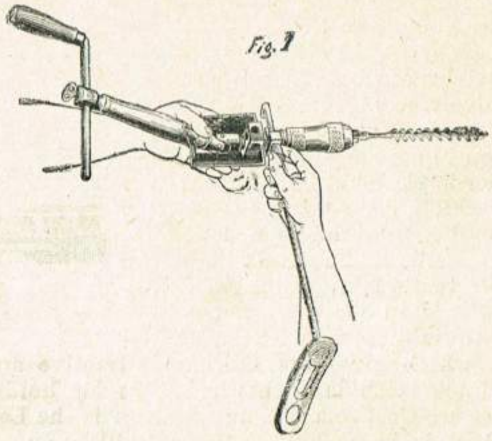


Fig 2

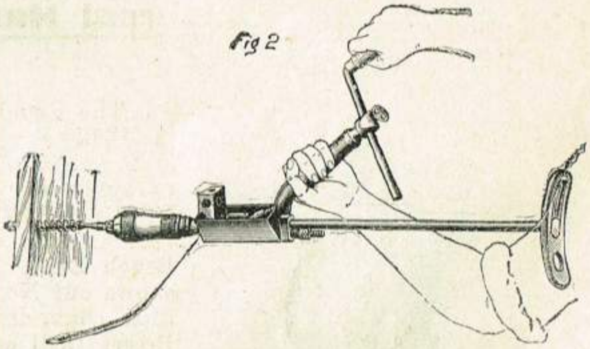
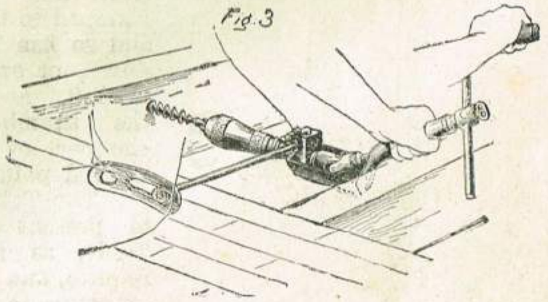


Fig. 3

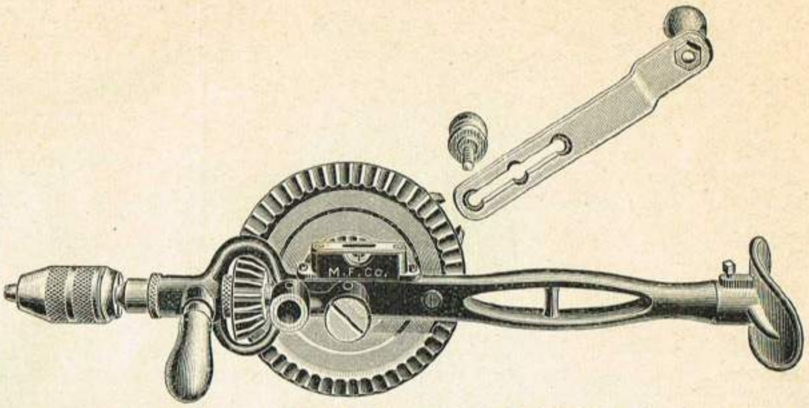


398 This Brace is especially adapted for work where it would be impossible to bore a hole with any other tool, and wherever a brace is needed. It is particularly useful for corner boring and between beams, and is the latest improved tool of its kind, as holes can be bored in a closer space, as well as absolutely in line with point of rest of the angle. It is readily taken apart. Breast rest is detachable. Handle can be adjusted to have a sweep of from 4in. to 13in. Hard wood handle.

Price, Nickel-plated, 13/6 each.

Breast Drill.

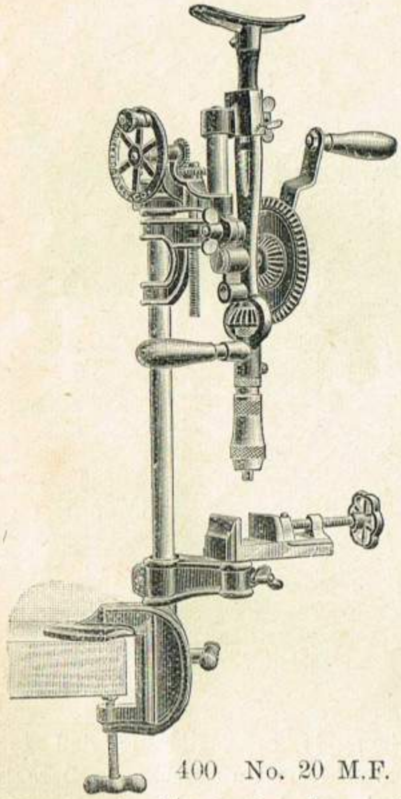
399 No. 18. M.F.—BALL BEARING.



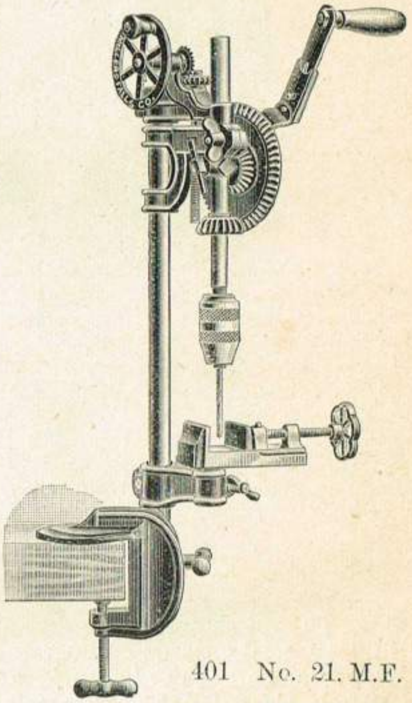
Changeable gear from even, to speeded about 3 to 1.

This Drill has been greatly improved recently. As now made the drive wheel is 5in. in diameter. The gears are cut from solid metal, and run almost absolutely perfect. A roller is placed at back of drive gear, which makes it equally as firm and substantial as a double-geared Drill. The crank is adjustable to three different lengths, and is held in place by a round head thumb-screw with milled edges, which gives the Drill an attractive appearance. The drive gear is held by a similar screw. The chuck is made with three jaws for holding round Shank Drills only, from $\frac{1}{16}$in. to $\frac{1}{2}$in. The handles are Cocobola. A new feature is the Level Attachment, which enables the operator to see when the Drill is being held true, and will be appreciated by good mechanics. Everything about the tool will be found durable and nicely finished. Price, **15/-** each.

Universal Hand Drill Press.



400 No. 20 M.F.



401 No. 21. M.F.

The Standard and Frame in Drill Press, as exhibited in Fig. No. 20, was designed to apply our No. 10, 12, or 18 Breast Drill, so as to convert into a Drill Press or Bench Drill. The illustration shows our No. 12 Breast Drill thus converted. The No. 10 Breast Drill can be converted with equal ease.

The Bench Clamp, Vise Rest and Frame are all clamped to the Main Standard, and so can be moved up and down, or swung to the right or left, and by means of the thumb-screw provided, clamped or secured at any desired point.

The Table can be reversed to present either a Vise or Table, as the operator may require, and is hung on a pin off centre to admit of a variety of positions.

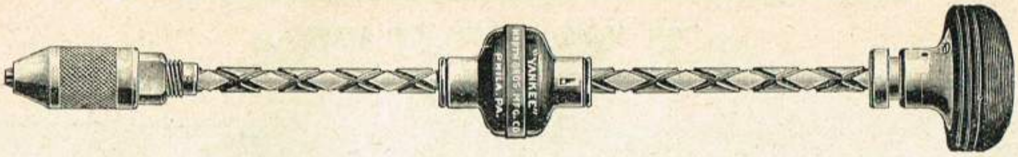
The operator may, if desirable, work below the bench by dropping the Frame and Fixtures down on the Standard, and securing the upper end of the same in the Bench Clamp. This is very convenient in bicycle repairing. In short, the number of positions, heights and adjustments that will suggest themselves as necessity demands, with this tool, is astonishing.

Fig. No. 21 represents the Universal Hand Drill Press with special Drilling Attachment provided for it. This Drilling Attachment has double gears (large 5in., small 2in., in diameter), Extension Handle, Three-jawed Chuck, taking straight shank drills from 0 to $\frac{1}{2}$in.

400 Price for Attachment only, as Fig. No. 20 (without Breast Drill), each ...	**17/6**
401 Price of Standard and Drilling Attachment complete, as Fig. No. 21, each ...	**30/-**

☞ **IN ORDERING No. 20, TAKE NOTE THAT THE BREAST DRILL IS NOT INCLUDED**

"Yankee" Reciprocating Drill, No. 50Y.



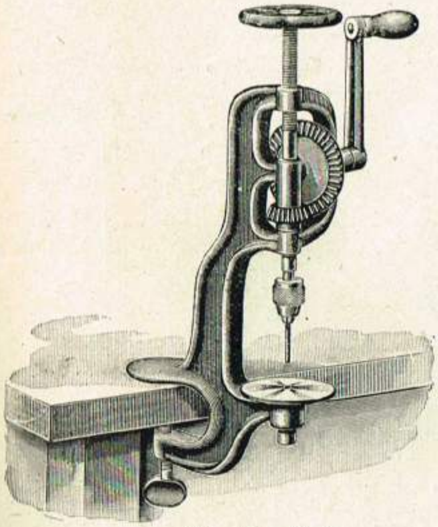
The movement or traverse of the driver is $8\frac{1}{2}$in. The entire length of tool without drill is 16in.

402 The materials and workmanship throughout are of the best, and each tool is guaranteed. Packed in strong paper box. Price 8/6 each.

The manufacturers say respecting this tool :—"This Drill differs very materially in design and workmanship from any having same appearance. It is designed for use in drilling in steel, iron, brass, and other metals, as well as all varieties of woods. It is so constructed that the Drill runs continuously to the right, during both the forward and backward movement of the driver, hence drills continuously. The pressure to feed the Drill is had by the pressure against the head of the tool which is provided with ball bearing to reduce the friction. While lighter in weight, and, therefore, more convenient in use, it is in all essential points stronger than other apparently similar tools ; there is no tool made just like it. The Chuck is of new design, has three jaws, is accurate, and stronger and more durable than similar chucks, and will not get out of order."

No Drill Points are furnished with this tool—the user furnishing such quality, style and size best suited for work required in wood, iron, steel, brass, &c. The Chuck will hold any Drill with shanks $\frac{3}{16}$in. diameter or less. To open or close Chuck move the Driver up to Chuck, push down the catch in lower end of driver, which holds fast the driver on spindle. After Drill is put in Chuck and tightened, push up the catch, releasing driver from spindle so it can be moved backward and forward to operate Drill.

Bench Drills.



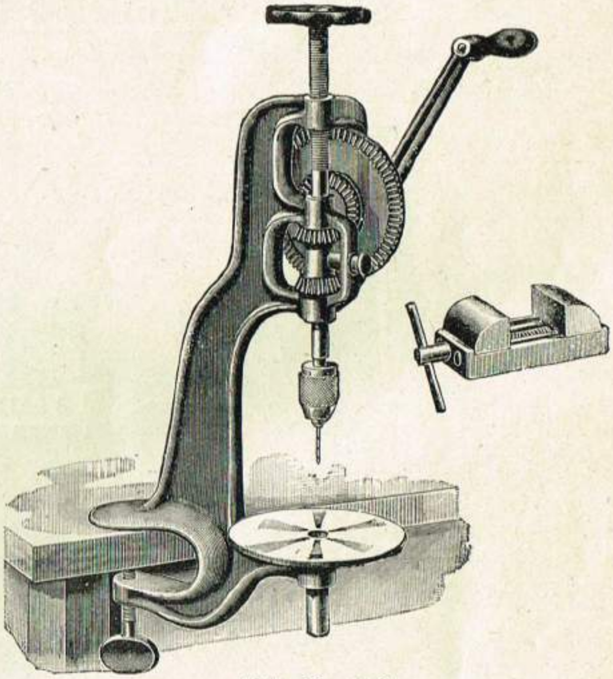
403 No. 8 G.

Nothing in the line of a small Bench Drill of excellent quality and moderate price has ever been put on the market which can compare with the line we are here illustrating.

The No. 8 G, above shown, is a substantial little machine, with solid Iron Frame, Cut Gears, Steel Feed Screw, and Adjustable Table, all well made and nicely fitted. It is furnished complete with a Three-jawed Chuck, capacity 0 to $\frac{1}{4}$in., and Eight Fluted Drills. The height from the table to the feed wheel is 13in.

The machine is finished in an attractive manner, and is a very great improvement upon those we have previously sold.

Price, 15/6 each.



404 No. 9 G.

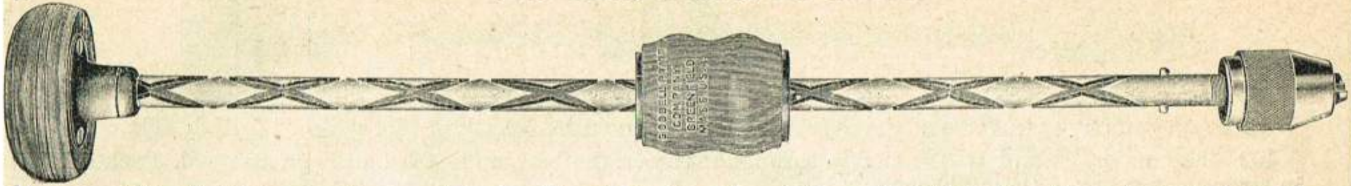
This machine is the companion to the preceding one, but made correspondingly larger and heavier. It has a solid Iron Frame, Cut Gears, and two different speeds, an Adjustable Table and Steel Feed Screws, all well made and fitted. It is furnished with a Three Jawed Chuck, capacity 0 to $\frac{3}{8}$in., and eight Fluted Drills. Height from Table to the Feed Wheel is 18in.

404 Price, 25/-

405 Special Vice to suit above, and opening 2in., 6/6.

Reciprocating Automatic Drill. No. 0.

FOR IRON, BRASS, OR WOOD.



This Drill is a really good tool. The following description of it is taken from Manufacturers' Catalogue—C. N. & Co. :—

There has been an unsupplied demand for a tool of this character, capable of drilling with comparative ease ¼in. Twist Drills in Iron; for while a tool of this character cannot take the place of an Automatic Drill made to be operated by the use of a single hand, for the simple reason that it is intended for a different class of work, it will nevertheless be found a valuable addition to any mechanic's kit.

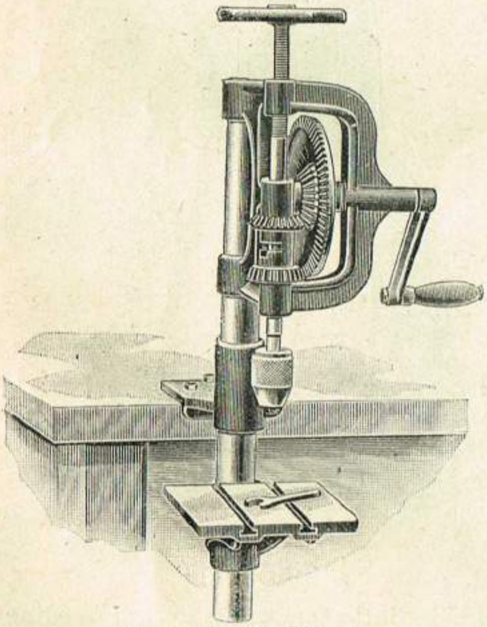
This tool will be found very useful for drilling holes where Braces, Breast Drills, or Hand Drills cannot be conveniently brought into play. In its construction we have endeavoured to eliminate errors which are too plainly apparent upon other similar tools; the angle slant of the Spiral is twenty degrees, minimising the friction and magnifying the power; the Travelling Handle is of polished cherry, shaped as to ensure an easy and comfortable grip for the hand of the operator; the internal mechanism is extremely simple, and will not get out of order; the Head is of lignum-vitæ, supported by a heavy quill running in ball-bearings; the three-jawed Chuck has a capacity to ¼in-

The above brief description covers, we believe, the essential points. The finish and appearance of the tool is up to our usual standard, and we do not hesitate to say that it surpasses in every way any tool of this character which has heretofore been shown. No drills furnished without extra charge.

406 Price 6/- each. Sets of special Twist Drills to suit above from $\frac{1}{16}$ to ¼in. by $\frac{1}{32}$in., 3/- per set.

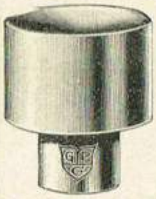
Superior Finished Light Bench Drills.

EXTRA ATTACHMENTS.

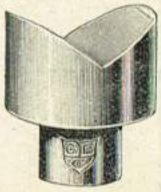


Nos. 10 and 10½.

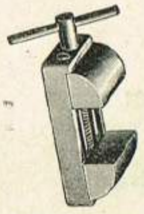
1 Plain Centre.



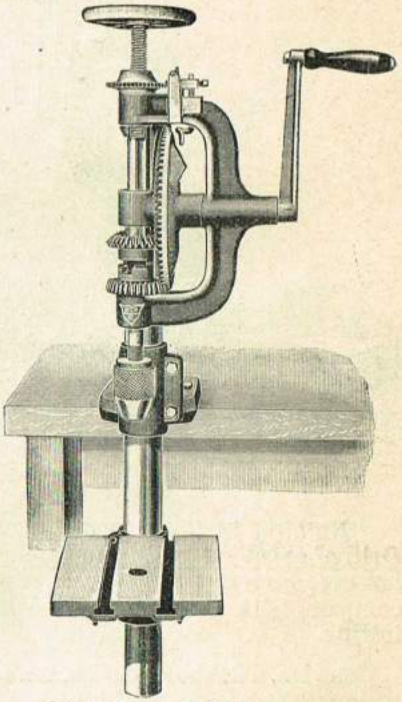
1 Cup Centre.



1 V Centre.



1 Machine Vise.



Nos. 11 and 11½.

General Description of Drills :—

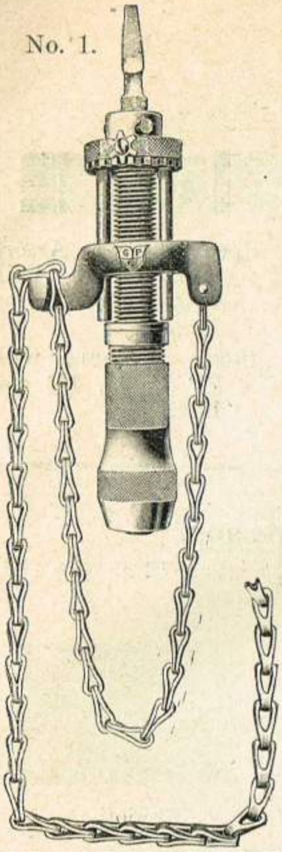
Upright Shaft of polished steel tube, 1½in. diameter, 24in. long; all the working parts of the machine are clamped to it. Gears are cut from solid blanks and run smoothly. Chuck: A three-jawed chuck, capacity 0 to ½in., is fitted to each machine. Table, milled and slotted, size 6in. by 6½in., adjustable up and down or right and left, or can be entirely removed, and work blocked up from the floor if desired. Speeds: Two, changed by throwing cam attached to shifter knob.

Nos. 11 and 11½ are in every way identical with Nos. 10 and 10½, with the addition, however, of an Automatic Feed, which can be used or thrown out at the will of the operator.

Price, No. 10, 45/-. No. 10½, which is No. 10 complete with Set of 4 Extra Attachments, 52/6.
Price, No. 11, 52/6. No. 11½, „ No. 11 „ „ „ 60/-.

Automatic Chain Drills.

No. 1.



407 These devices will be found very useful in connection with a Bit Brace or Breast Drill in many places where it is not convenient to bring an ordinary Ratchet Drill into use. They have an entirely automatic feed, the end thrusts have their friction reduced by ball-bearings, and an equipment of 3ft. of best steel chain is supplied with each drill.

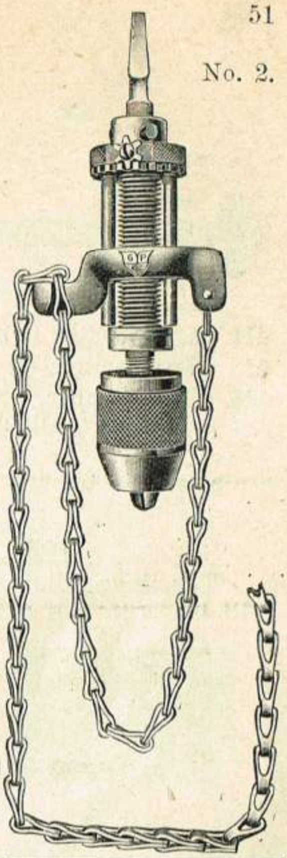
No. 1 Pattern is supplied with ordinary Brace Jaws, and is suitable for holding any bits with the usual square shanks.

No. 2 Pattern is fitted with a 3-jawed chuck, capable of holding round shank drills from 0 to $\frac{1}{2}$in.

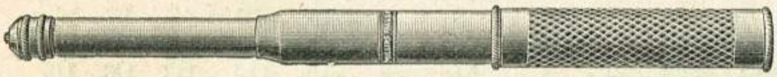
Both Patterns are well made and attractively finished.

No. 1.—Price 8/6 each. No. 2.—Price 13/6 each.

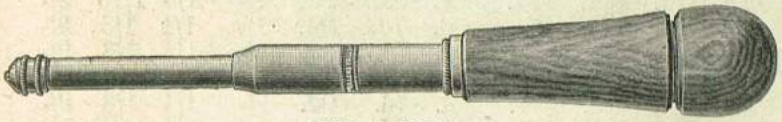
No. 2.



Automatic Boring Tools.



No. 3 M.F.

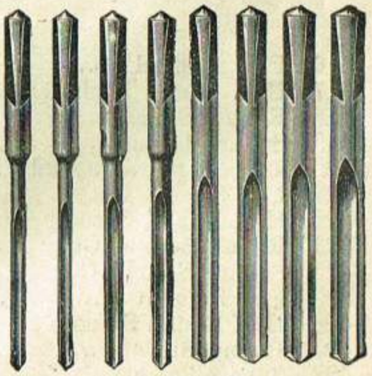


No. 4 M.F.

These tools are perfect in both quality and finish.

408 No. 3 M.F. All metal handle, with 8 points ... 5/- each.
409 No. 4 M.F. Cocobola handle, with cells for the 8 points 6/- each.

Nos. 1 2 3 4 5 6 7 8



Extra Drill Points 3/- per doz.

"Yankee" Automatic Drill.

"YANKEE"
AUTOMATIC DRILL No 42
NORTH BROS. MFG. CO.
PHILADA PA.

No. 42 Y.

410 For Carpenters, Cabinet Makers, &c., for boring wood for various purposes, as setting screws, brads, nails, &c. Bores holes in hard or soft woods without splitting. Pushing handle down revolves the drill, and a spring pushes handle back to its place. During the return movement the drill point revolves backward to clear chips, &c. The drill points are put up in a small round wooden box.

The chuck is of new and improved design, and will hold drill points tight and absolutely rigid.

All metal parts other than the spiral spindle are nickel plated and finely finished. The material and workmanship throughout are of the best.

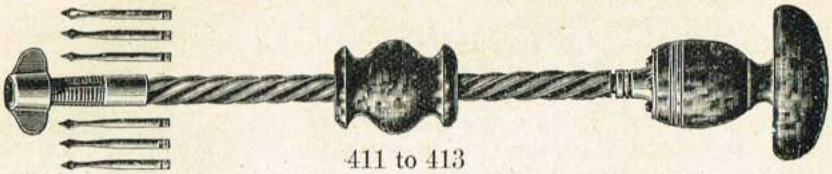
8 drill points are furnished with each tool, one each, $\frac{1}{16}$, $\frac{5}{64}$, $\frac{3}{32}$, $\frac{7}{64}$, $\frac{1}{8}$, $\frac{9}{64}$, $\frac{5}{32}$, and $\frac{11}{64}$in.

The entire length of tool, inclusive of drill, as in illustration, is $11\frac{3}{8}$in.

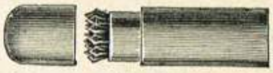
Packed in strong paper box. Price 4/6 each.

Drills—*continued.*

Archimedian.



411 to 413



411 Archimedian Drill, 6 Bits, and Screw Chuck, 9d and 1/- each.

412 Best Quality Ditto, 6in. 1/6, 8in. 2/-, 10in. 2/6, 12in. 3/- each.

413 Extra Quality, with Forged Bar and with Brass Centre Handle (*not Wood* as Illustration), 8in. 2/6, 10in. 3/-, 12in. 3/6 each.

414 Special Line, Assortment of 12 Drill Bits in Box, 8d. per Box.

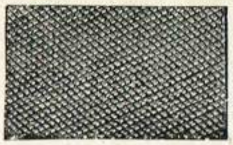
415 Boxes as above, with 24 Drills, 1/2 per Box.

For Larger Drills see Engineers' Section.

Files.

Best Refined Crucible Cast Steel Files and Rasps.

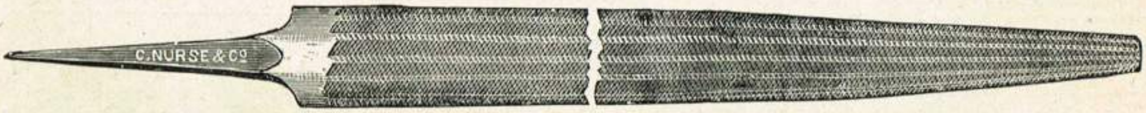
The three following Cuts are engraved from files 12in. long. If longer than 12in., the Cuts will be larger ; if shorter, they will be less in proportion.



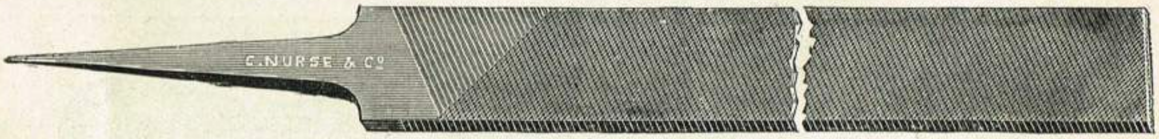
Bastard.

Second Cut.

Smooth.

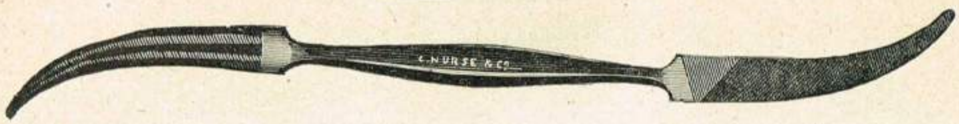


		3	4	5	6	7	8	9	10	12	14	15	16in.
416	Flat Bastard	2½d.	2½d.	3d.	3½d.	4½d.	5½d.	6d.	7½d.	11d.	1/3	1/6	1/9
417	Half Round Bastard ...	2½d.	2½d.	3d.	3½d.	4½d.	5½d.	6d.	7½d.	11d.	1/3	1/6	1/9
418	Round Bastard	2½d.	2½d.	3d.	3½d.	4½d.	5½d.	6d.	7½d.	11d.	1/3	1/6	1/9
419	Square Bastard	2½d.	2½d.	3d.	3½d.	4½d.	5½d.	6d.	7½d.	11d.	1/3	1/6	1/9
420	Three Square Bastard ...		3d.	3½d.	4½d.	5½d.	6d.	8d.	9d.	1/-	1/6	1/10	2/-
421	Flat Second Cut ...		3d.	3½d.	4½d.	5d.	6d.	7d.	9d.	1/-	1/4	1/8	2/-
422	Half Round Second Cut		3d.	3½d.	4½d.	5d.	6d.	7d.	9d.	1/-	1/4	1/8	2/-
423	Round Second Cut ...		3d.	3½d.	4½d.	5d.	6d.	7d.	9d.	1/-	1/4	1/8	2/-
424	Square Second Cut ...		3d.	3½d.	4½d.	5d.	6d.	7d.	9d.	1/-	1/4	1/8	2/-
425	Flat Smooth		3½d.	4½d.	5d.	6d.	7d.	8d.	10d.	1/1	1/6	1/9	2/2
426	Half Round Smooth ...		3½d.	4½d.	5d.	6d.	7d.	8d.	10d.	1/1	1/6	1/9	2/2
427	Round Smooth		3½d.	4½d.	5d.	6d.	7d.	8d.	10d.	1/1	1/6	1/9	2/2
428	Square Smooth		3½d.	4½d.	5d.	6d.	7d.	8d.	10d.	1/1	1/6	1/9	2/2



		3	4	5	6	7	8	9	10	12	14	15	16in.
429	Hand Bastard	3d.	3d.	3½d.	4½d.	5½d.	6d.	8d.	9d.	1/-	1/6	1/9	2/1
430	Hand Second Cut	3d.	3d.	4d.	5d.	6d.	7d.	8½d.	10d.	1/1	1/8	2/-	2/4
431	Hand Smooth	4d.	4d.	4½d.	6d.	7d.	8d.	10d.	11d.	1/3	1/9	2/2	2/8
432	Half Round Wood Rasps		3d.	3d.	3½d.	4½d.	5½d.	6d.	7½d.	11d.	1/3	1/6	1/9
433	Round Rasps		3d.	3½d.	4½d.	5d.	6d.	7d.	9d.	1/-			
434	Half Round Cabinet Rasps		3½d.	4½d.	5d.	6d.	7d.	8d.	10d.	1/1	1/6	1/9	2/2
435	Half Round Cabinet Files		3½d.	4½d.	5d.	6d.	7d.	8d.	10d.	1/1	1/6	1/9	2/2
436	Improved Shoe Rasps ...						6d.	8d.	9d.				
437	Improved Horse Rasps, ¼ or ½ File										1/3	1/6	1/9
438	Pillar Files				5d.		7d.		10d.				
439	Knife Edge Files		6d.	7d.	8d.								
440	Feather Edge Files ...		6d.	7d.	8d.								

Files—*continued.*



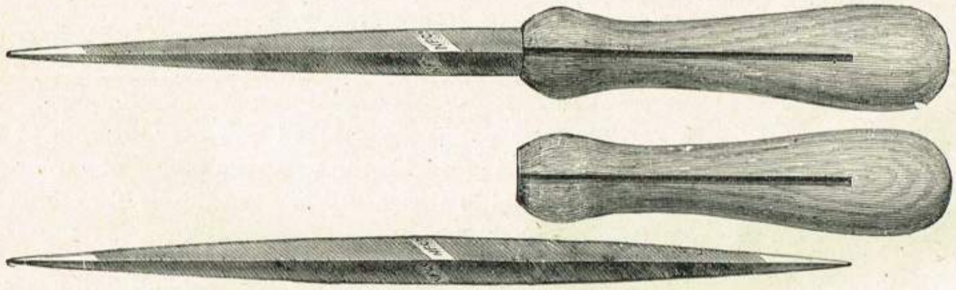
441 Riffler Bastards, Assorted Patterns, 8in. 9d.; 9in. 10d.; 10in. 1/-

Saw Files.

		2 to 3½	4	4½	5	5½	6	7	8	9	10	12 in.
442	Taper Saw Files	2½d.	3d.	3d.	3½d.	4d.	4½d.	6d.	7d.	9d.	1/-	1/4
443	Half Round Pit Saw Files ...		3½d.	4d.	4½d.							
444	Round Gulletting Saw Files ...		3½d.	4d.	4½d.		6d.	7d.	9d.			
445	Mill Saw Files with 2 round edges								7d.	8d.	10d.	

	Blunt Saw Files—	3	3½	4	4½	5	6	7 in.
446	Single Cut	3d.	3½d.	4d.	4½d.	5d.	6d.	7d. each.
447	Double Cut	4d.	4½d.	5d.	6d.	7d.	8d.	9d. each.

"Double Ender" Handsaw File and Handle.

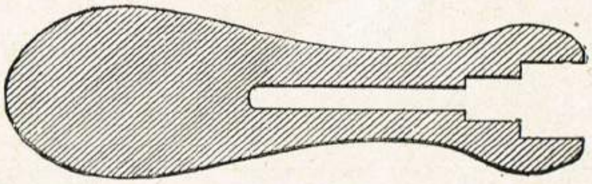


448 These are designed as an improvement upon the ordinary Taper Saw File, giving a greater cutting surface, a longer stroke, and a special handle adapted to fit at either end of the File with a firm grasp. These Files are made in lengths—

7in. 4½d.; 8in. 5d.; 9in. 5½d.; 10in. 6d. each.

Including Special Handle with each File.

File Handles.



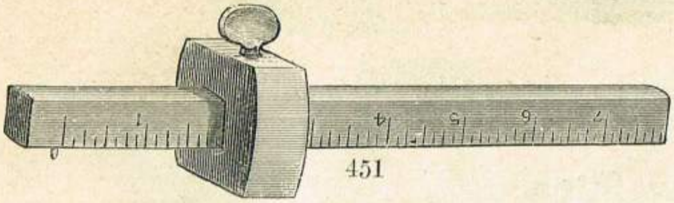
449 The Improved "Simplicity" File Handle, 10d. per dozen.

450 Best Quality London-made File Handles, with brass ferrules, 1/- per dozen.

Special Quotations will be made for Files when purchased in quantities of 6 dozens and over.

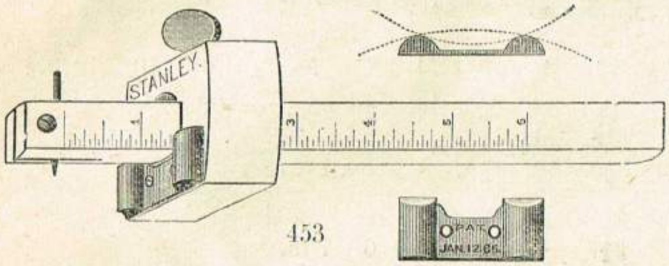
Gauges.

Marking.


451

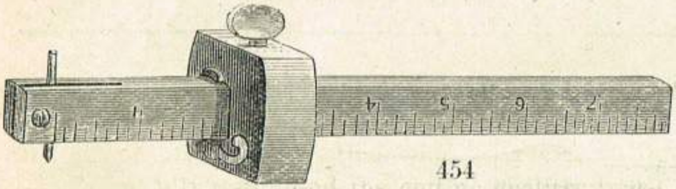
451 Beechwood Gauge, Rule Marked, 3d. each.

452 Ditto, Polished, with Adjusting Steel Point, 5d. each.

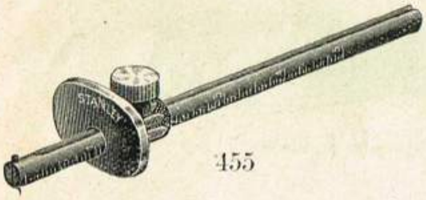


453

453 Polished Beechwood, Rule Marked Stem, Adjusting Steel Point, with two Brass Ribs or Projections, which ensure steadiness when running a gauge line around curves of any degree, 8d. each.


454

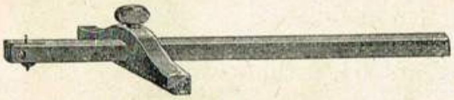
454 Polished Hardwood Gauge, Plated head, Brass Thumbscrew and Shoe, Rule Marked Stem, with Adjusting Steel Point, 1/3 each.



455

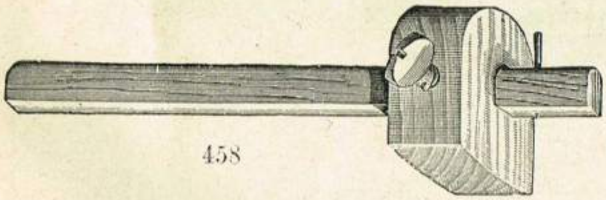
The steel points are attached very near the ends of the bars, to admit of being used close up into a rabbet or corner. The head of the Marking Gauge can be turned over for a broad or narrow bearing, as desired.

455 No. 90 S. Nickel-plated Marking Gauge, 1/6 each.


456

456 Panel Gauge, Beechwood with Steel Points, 1/- each.

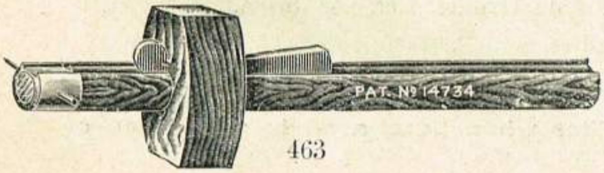
457 Ditto, Rosewood with Plated Head and Bar, Brass Thumbscrew and Shoe, 3/9 each.


458

458 Best Polished Edge Beechwood, 6d. each.

459 Ditto, Brass Plated, 9d. each.

460 Best Polished Hardwood Gauge, 1/2 each.



463

461 Patent Wedge Beech Marking Gauges, small size, 4d. ; large size, 6d. each.

462 Ditto, with Plated Head, 9d. each.

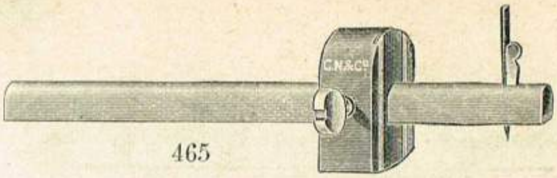
463 Ditto, Rosewood, with Brass Hooped Stem, 1/6 each.

Gauges—*continued.*

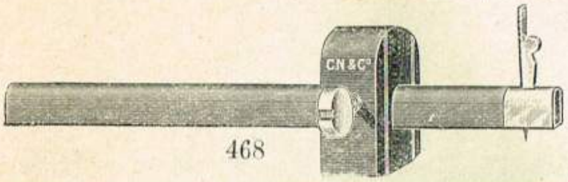
Cutting and Combination.

464 Polished Edge Beechwood Cutting Gauge ... ... 9d. each.

465 Ditto, Brass Plated on Face, 1/- each.



465



468

466 Polished Hardwood Cutting Gauge, 1/4 each.

467 Ditto, Brass Hooped on Stem, 1/9 each.

468 Ditto, Ditto, and also Plated on Head, 2/3 each.

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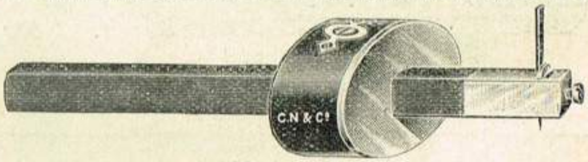
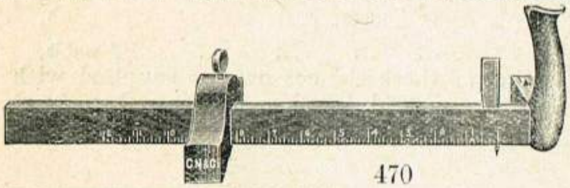
469 Best Oval Ebony Cutting Gauge with Head and Stem Brass Plated, 3/9 each.



469



470

470 Handled Slitting Gauge, with Roller, and 17in. Rule Marked Bar ... 2/6 each.

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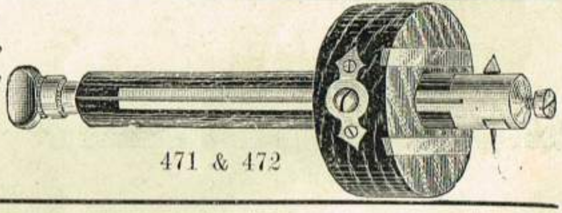
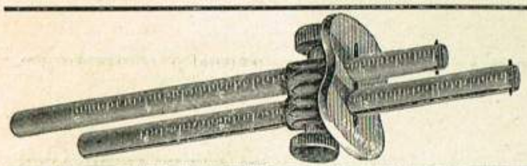
471 Improved New Pattern Combination Marking, Cutting, and Mortice Gauge. Oval Rosewood. Brass Plated Head ... ... 4/- each.

472 Ditto, in Ebony, ... 4/6 each.



471 & 472



473 American Combination Marking and Mortice Gauge, with Rule Marked Bars, ... 2/9 each.

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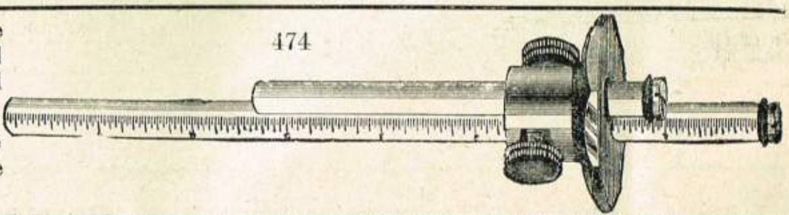
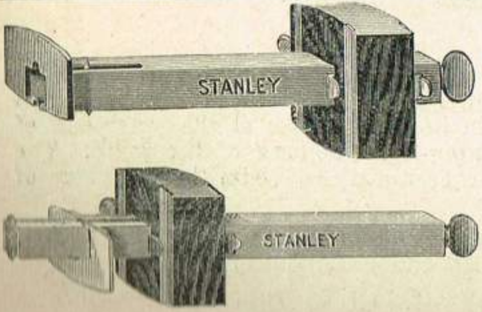
474 American Combination Mortice and Marking Gauge, Nickel Plated, Rule Marked Steel Bars ... ... 4/3 each.

475 Ditto, similar gauge, but made with 3 Nickel Plated Rule Marked Bars ... 5/- each.

474

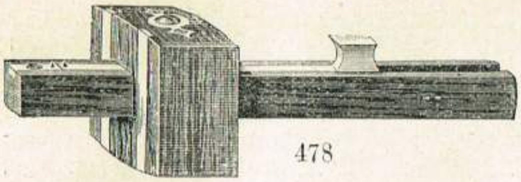




476 Stanley's Butt and Rabbet Gauge, for Hanging Doors, Mortising, Marking, &c. This Gauge has 2 bars, both of brass, one movable within the other; also 3 blades or markers. The 2 steel blades or markers at the extreme end of the inner bar can be moved to any position by means of the thumbscrew at opposite end of Gauge. Price 4/9.

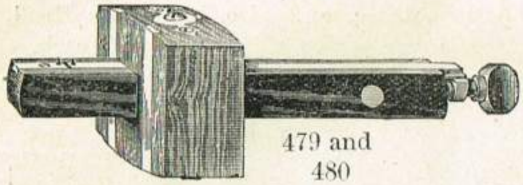
Gauges—*continued.*

Mortise.


478

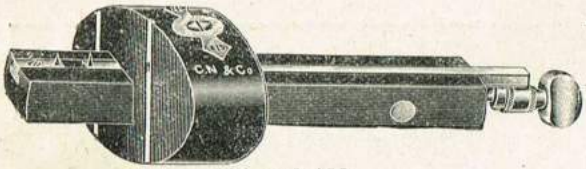
477 Rosewood Mortise Gauge, with Brass Slide with Brass Shield on head ... ... 2/- each.

478 Ditto, Plated on face, as Illustration 2/3 each.


479 and 480

479 Rosewood Mortise Gauge, square head, Brass Plated with Thumbscrew ... ... 3/- each.

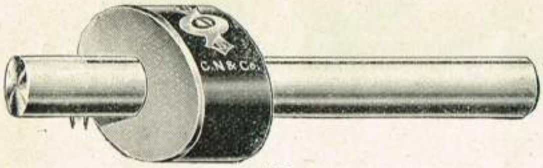
480 Ebony Ditto ... ... 3/3 each.



481 and 482

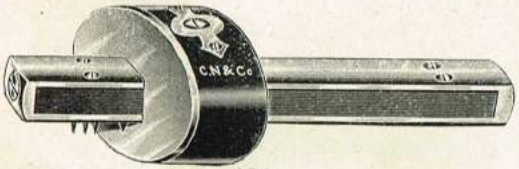
481 Rosewood Mortise Gauge, Oval Brass Plated Head, Thumbscrew end ... 3/6 each.

482 Ebony Ditto... ... . 3/9 each.
Either of these Gauges can be supplied with Turnscrew End in place of Thumbscrew at same price.



483

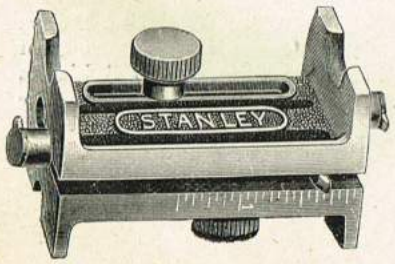
483 Our Special Line, Round Brass Stem Mortise Gauge, with Oval Ebony Brass Faced Head......4/3 each.



484

484 Best Ebony Mortise Gauge, Brass Plated Stem, Oval Brass Faced Head with 3 pins ... ... 6/- each.

Improved Butt Gauge.

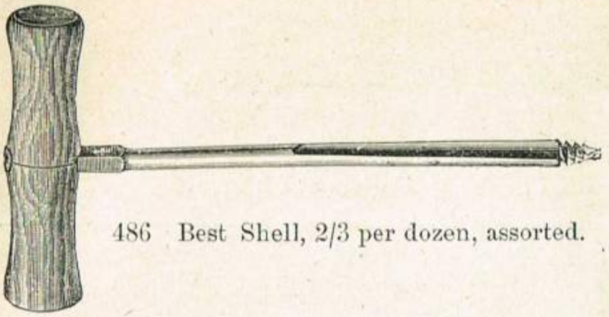


A Metallic Butt Gauge, having one bar with two steel cutters fixed upon it. When the cutter at the outer end of this bar is set for gauging on the edge of the door, the cutter at the inner end of the bar is already set for gauging from the back of the jamb. The other bar has a steel cutter to accurately gauge for the thickness of the butt.

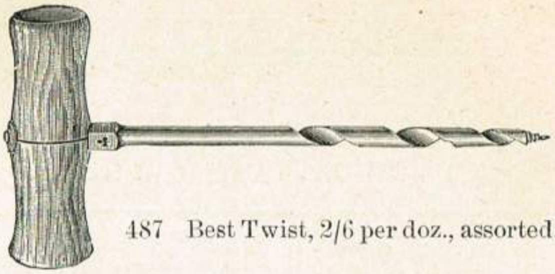
The form of this Tool is convenient for carrying in the pocket. It is so constructed that the bars cannot fall out of the stock.

485 No. 95 S Nickel-Plated Butt Gauge, one in a box, 3/- each.

Gimlets.



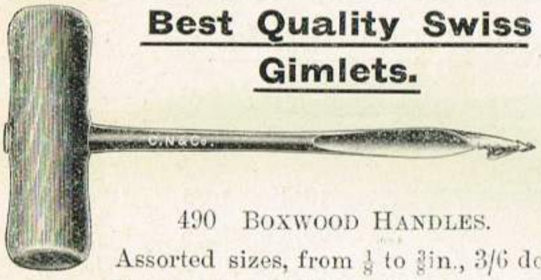
486 Best Shell, 2/3 per dozen, assorted.



487 Best Twist, 2/6 per doz., assorted.

			$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$in.
488	Best Spike Shell Gimlets	...	$3\frac{1}{2}$d.	4d.	$4\frac{1}{2}$d.	5d.	5d.	6d.	7d.	8d.
489	Best Spike Twist Gimlets	...	4d.	5d.	6d.	$6\frac{1}{2}$d.	7d.	8d.	10d.	11d. each.

Best Quality Swiss Gimlets.



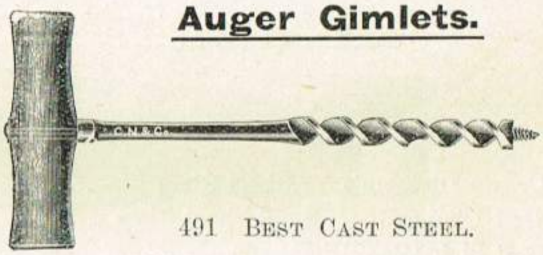
490 BOXWOOD HANDLES.

Assorted sizes, from $\frac{1}{8}$ to $\frac{3}{8}$in., 3/6 doz.

If sold in less than dozens,

Under	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$in.
	3d.	$3\frac{1}{2}$d.	4d.	$4\frac{1}{2}$d. each.

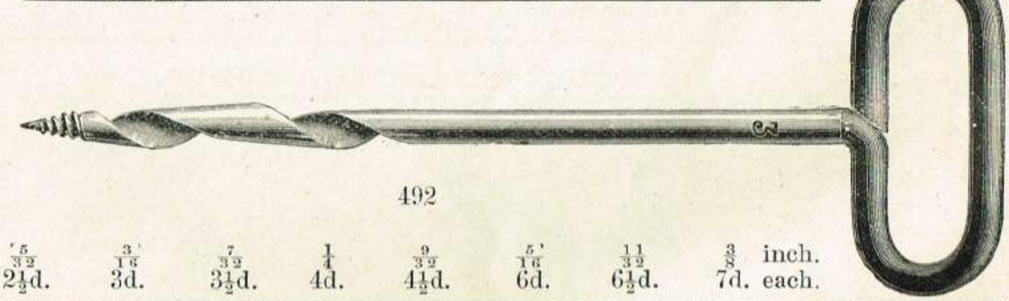
Auger Gimlets.



491 BEST CAST STEEL.

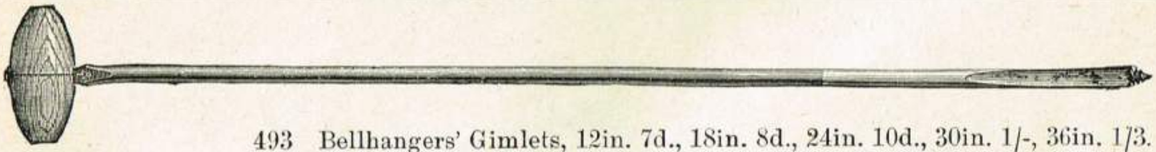
$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$in.
4d.	6d.	7d.	9d.	10d. each.

Best Quality Iron Head Twist Gimlets.



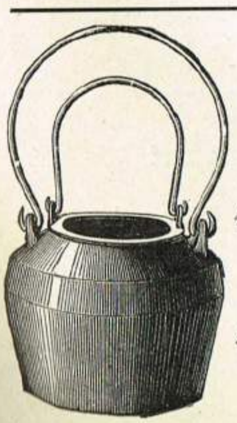
492

Sizes	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{11}{32}$	$\frac{3}{8}$ inch.
	$2\frac{1}{2}$d.	$2\frac{1}{2}$d.	3d.	$3\frac{1}{2}$d.	4d.	$4\frac{1}{2}$d.	6d.	$6\frac{1}{2}$d.	7d. each.



493 Bellhangers' Gimlets, 12in. 7d., 18in. 8d., 24in. 10d., 30in. 1/-, 36in. 1/3.
494 Brewers' Gimlets, Twist or Shell, 6d. each.

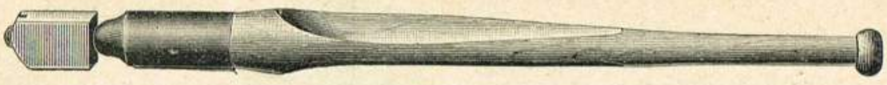
Glue Pots.



Best Quality, with Tinned Inside Pans.

		$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{9}{16}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$ pints.
495	Inner Pan containing	1/-	1/2	1/4	1/6	1/8	1/10	2/-	2/6	3/-	3/6	4/-	4/6 each.
496	Superior Quality, with Inside Pan made of stout Copper,	2/-	2/2	2/4	2/6	2/9	3/-	3/6	4/3	5/-	6/-	7/-	8/- each.

Glass Cutters' and Glaziers' Diamonds.



497 Reliable Class Cutters ... ... 6d. and 1/- each.

498 Extra Cutting Wheels can be supplied to the 1/- Cutters at 3d. each.

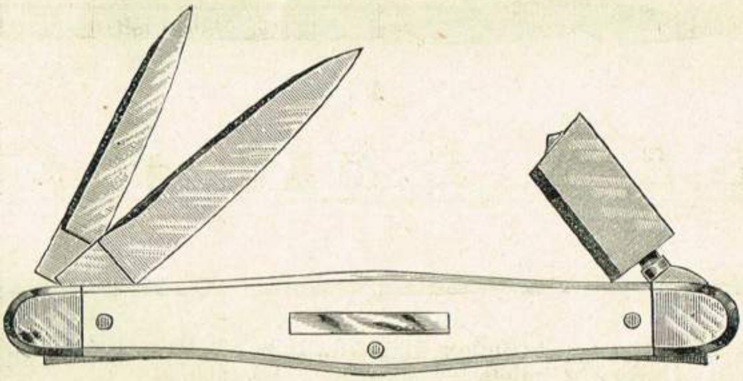
499 Improved Glass Cutters, with Six Cutting Wheels ... ... 2/- each.

Best London-made Glaziers' Diamonds.

500	Crown Diamonds for Sheet Glass	10/6	13/6	16/6	each.
501	Best Diamonds for Stout Sheet Glass	18/6	22/6	25/-	,,
502	Best Plate Glass Diamonds	30/-	35/-	42/-	,,
503	Best Ivory Handled Sheet Glass Diamond, with Silver Ferrule ...	—	—	20/-	,,
504	Improved Leather Pocket Cases for above	—	—	1/-	,,

All the above Diamonds we guarantee to be of London Manufacture. Every one is fully and carefully tested, and the cutting quality proved to be satisfactory. They are also all guaranteed to re-set. Price for re-setting 3/6 each, post free.

Pocket Knife Diamonds.



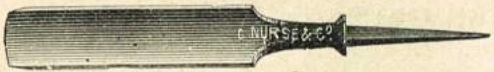
505	Knife Diamond, Ivory Handled, 1 Blade	15/6	each.
506	Ditto ditto 2 Blades	18/6	,,
507	Ditto Tortoiseshell Handle and 2 Blades	21/-	,,

WELLINGTON MILLS LONDON
GENUINE EMERY CLOTH
JOHN
OAKEY
& SONS

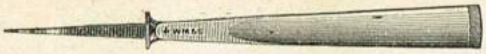
Glue, Glass Paper, and Emery Cloth.

508	French Medal Glue	5d. per lb.
509	Best Glass Paper	10d. per quire.
510	Best Glass Cloth	1/8 ,,
511	Best Emery Cloth	1/8 ,,
512	Extra Best Blue Twill Emery Cloth	3/- ,,

Gouges.

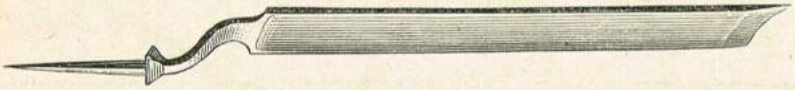


513 Firmer Gouge.

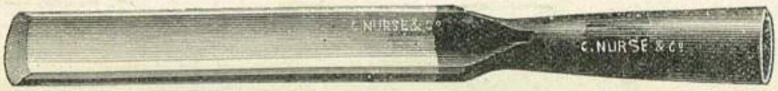


514 Scribing Gouge.

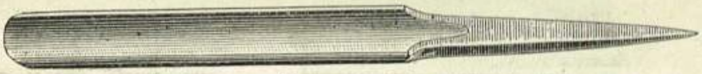
515 to 517 Long Paring Gouges, Sweeps A to G.



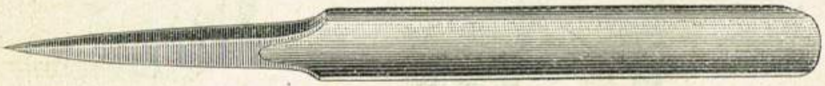
518 Cranked Paring Gouges, any Sweep, 5d. each extra.



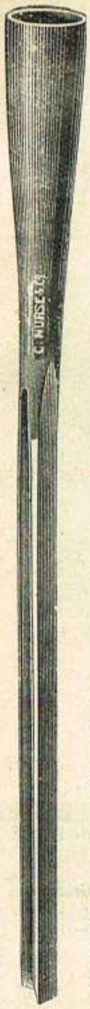
519 C.S. Socket Gouge Cannel Inside.



521 Turning Gouges.



522 Long strong Ditto.

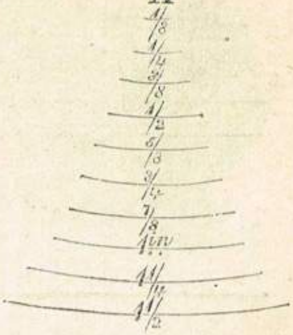


523 Wheelers' Socket Bruzz.

	⅛	$\frac{3}{16}$ or ¼	⅜	½	⅝	¾	⅞	1	1¼	1½	1¾	2in.
513 Firmer Gouge		4½	5	5½	6	6½	7½	8	11	1/2		
Set of 9 to 1½in. 5/6												
514 Scribing Gouge		6	6½	7	7½	8	9	9½	1/-	1/3		
Set of 6 to ¾in 3/6												
515 Paring Gouges, either A B C D or E Sweeps		11	11½	1/-	1/1	1/2	1/3	1/4	1/9	2/-		
516 Paring Gouges F Sweeps		1/-	1/-	1/1	1/2	1/3	1/4	1/5	1/10	2/2		
517 Paring Gouges G Sweep		1/1	1/1	1/2	1/3	1/4	1/5	1/6	2/-	2/4		
518 Cranked Paring Gouges, any sweep 5d. extra.												
519 C.S. Socket Gouges Cannel Inside				1/2	1/3	1/4	1/5	1/6	1/9	1/10	2/6	2/9
520 C.S. Socket Gouges Cannel Outside				1/-	1/2	1/3	1/4	1/5	1/8	1/9	2/3	2/6
521 Turning Gouges		6½	7½	8½	9	10½	1/-	1/1	1/5	1/10	2/2	2/8
522 Long Strong Ditto		1/1	1/2	1/4	1/6	1/8	1/10	2/-	2/6	3/-	3/6	3/9
523 Wheelers' Bruzzes			2/9	2/10	3/-	3/4						

Sweeps of Paring Gouges.

A



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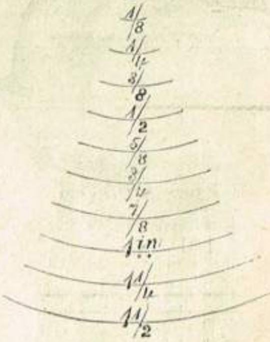
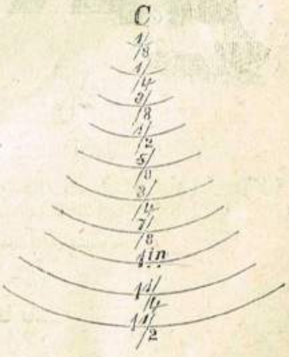
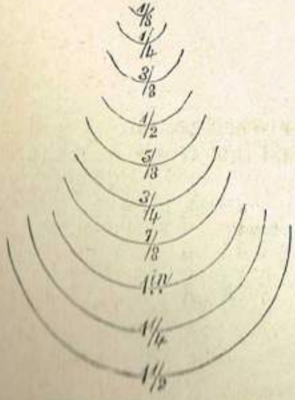


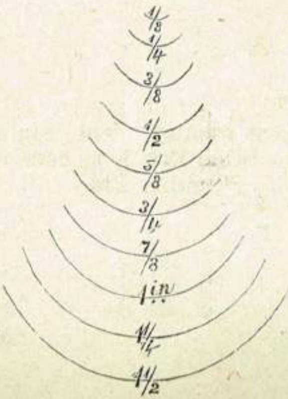
C



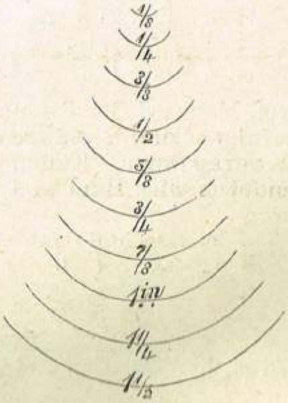
G



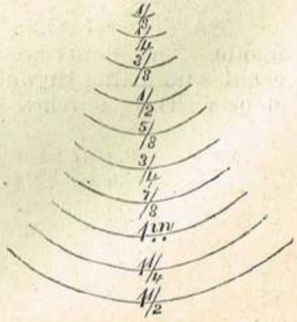
F



E

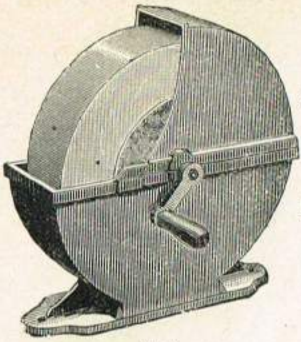


D



Grindstones.

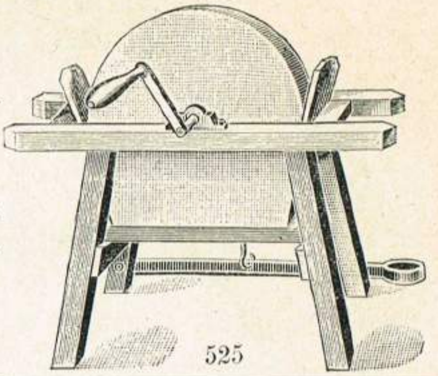
Net and Carriage Forward.


524

524 Dwarf Iron Mounted Grindstones—

6	7	8	9	10	12 in.
4/-	4/6	5/-	6/-	7/6	9/6 each.

525 Wood Mounted Grindstones, with Treadle and Handle—16in. 21/-, 18in. 24/- each.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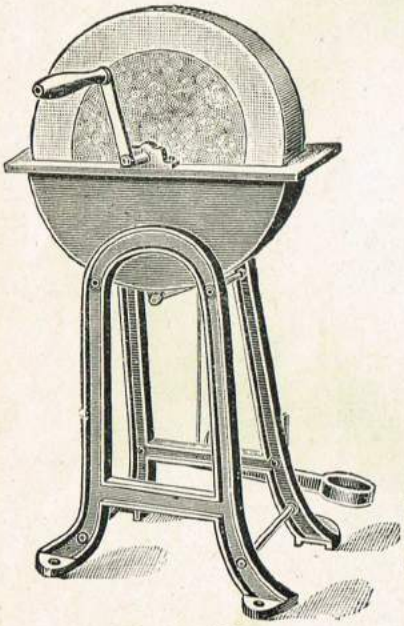
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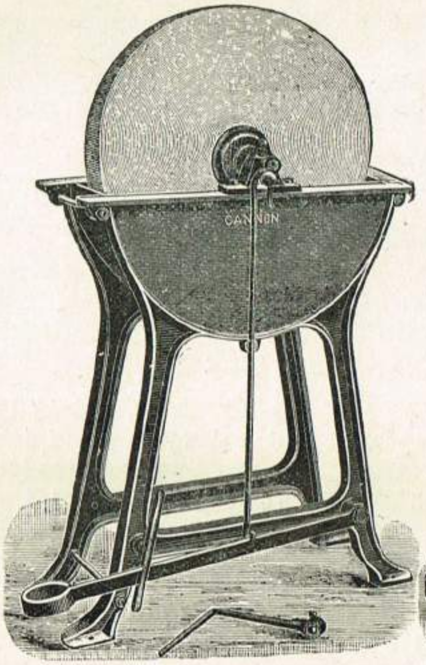

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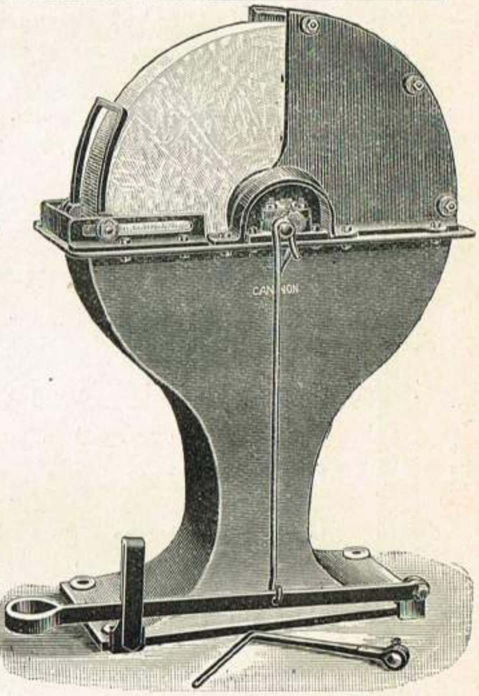


528

526 Light Iron Mounted Grindstones, with Treadle and Handle—12in., 18/6 ; 16in., 22/6 ; 18in., 28/6.

527 The Standard Iron Mounted Grindstone. Fitted with both Treadle and Handle, and with Screwed Plug at bottom of trough to let water off.

Size of Stone.	With Ordinary Bearings.	With Roller Bearings.
18 by 3 in.	£1 15 0	£1 17 6
20 by 3 in.	1 17 6	2 0 0
22 by 3½in.	2 0 0	2 3 0
24 by 3½in.	2 2 6	2 6 0

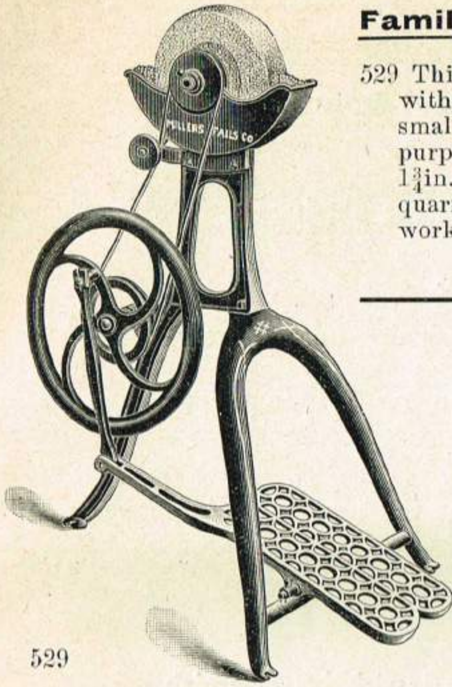
EXTRAS.	Sizes, to 20in.	22 to 24in.
Fitted with Water Can and Tap	6/-	6/-
Fitted with Fast Pulley only, instead of Treadle ...	3/3	3/9
Fitted with Fast and Loose Pulleys, instead of Treadle	8/9	11/6

528 The "Invicta" Iron Mounted Grindstone. This pattern comprises all the most recent improvements. The Stones are carefully selected, and are of best quality. The Frames are self-contained, and require no fitting beyond screwing down. The movable Slide Rest is so constructed that it will suit the stone until worn away. Complete with Handle, Treadle, Plummer Blocks, Best Brasses, and Slide Rest.

Size of Stone.	Price without Hood.	Price with Hood.	Price without Hood, but with Fast and Loose Pulleys for Power.
24 by 3½in.	£4 7 6	£4 14 6	£4 14 6
30 by 4in.	5 7 6	5 18 6	5 18 6
36 by 4in.	7 5 0	8 0 0	8 0 0

EXTRAS.	24in. or 30in.	36in.
No. 528 Fitted with Water Can and Tap	6/-	7/6

Grindstones (All Carriage Forward)—*continued.*



529

Family Grindstone, No. 2 G.

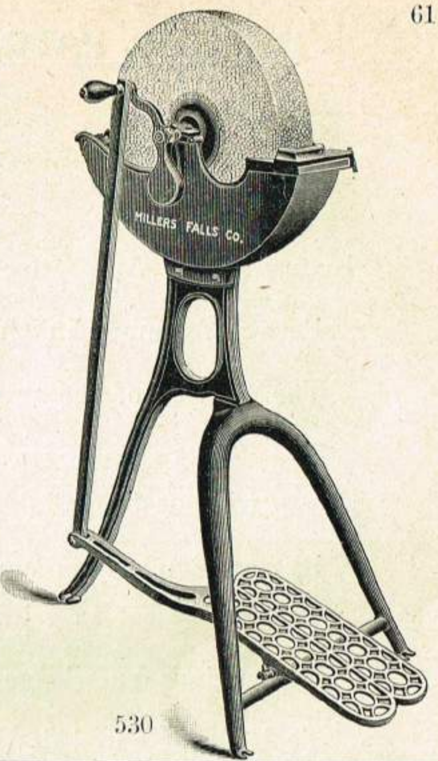
529 This Grindstone is very popular with jewellers and others who use small tools, also for household purposes. The stones are 8in. by 1¾in. They come from the Huron quarries and are correct grain for work which they are intended for.

Price 18/6 each.

Miller's Falls Grindstone, No. 3 G.

530 This is fitted with a Best Quality Grindstone, 14in. in diameter, 1¾in. thick. The iron frame is japanned. As the cut shows the stone is operated by a wooden pitman, which will be found both durable and satisfactory. Total weight, boxed, 85lb.

Price 20/- each.

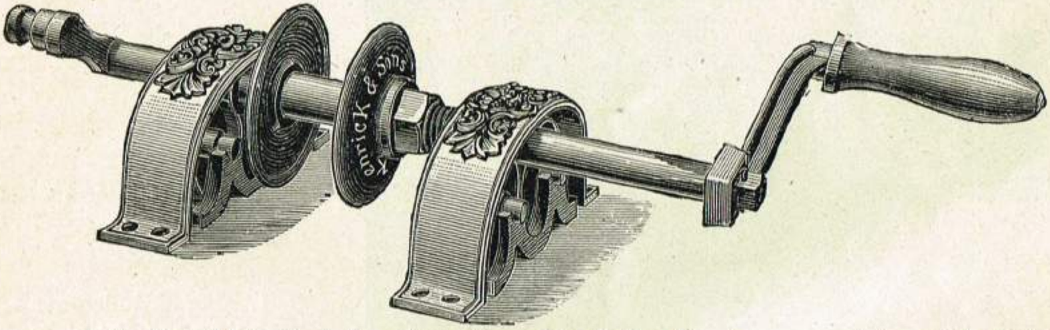

MILLERS FALLS CO.

530

531 Best Yorkshire Grindstones.

6	7	8	9	10	12	14	16	18	20	24	30	36in.
1/-	1/2	1/4	1/6	1/9	2/-	2/3	3/-	3/6	4/3	5/-	9/6	17/6 each.

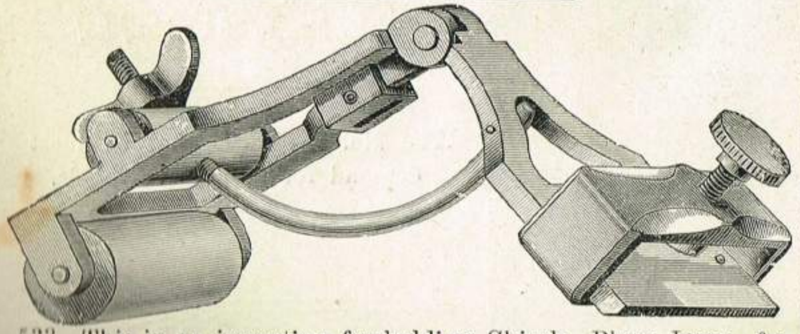
Grindstone Spindles.



532 Improved English Made Cast Iron Spindles with Roller Bearings, complete as illustrated—

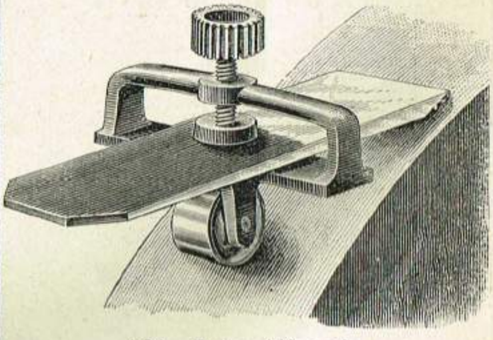
No.	Full Length of Spindles	to take in stones up to	
No. 1	15in.	2½in. thick,	3/-
" 2	17 "	3½ "	3/9
" 3	20 "	4½ "	4/6 each.

Improved Tool Grinder.



533 This is an invention for holding Chisels, Plane Irons, &c., while grinding them. When put in the Holder and brought to the right bevel with the adjusting screw, nothing is left to do but to bear it on the Stone, and it will grind all right without further care. Price 3/6 each

Tool-Grinding Rest.



534 Price 1/6 each.

ILSLEY'S PATENT TOOL GRINDING APPLIANCE.

Adopted by the London School Board.

By using this Apparatus the following Advantages are obtained :

Perfect Accuracy in Grinding Tools is ensured.

The Surface of the Stone is worn evenly ; no turning-up required.

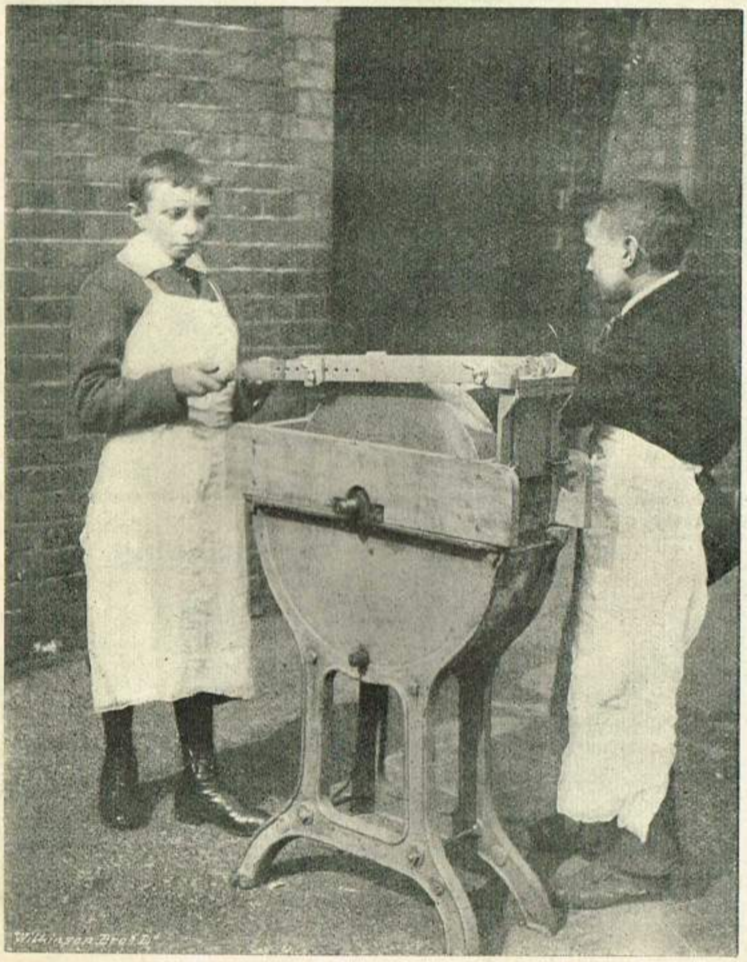
The Tools can be examined at any time during grinding operations without being taken out.

By the simple adjustment of the thumbscrews at the back, the Appliance can be set to grind any angle.

No previous knowledge of grinding required.

Tools ground in half the time usually taken, and with better finish.

When not in use can be turned round, right away from stone.



Sizes and Prices.

No. 1. For Grindstones—
18 by 2in. to 24 by 3in., 19/-

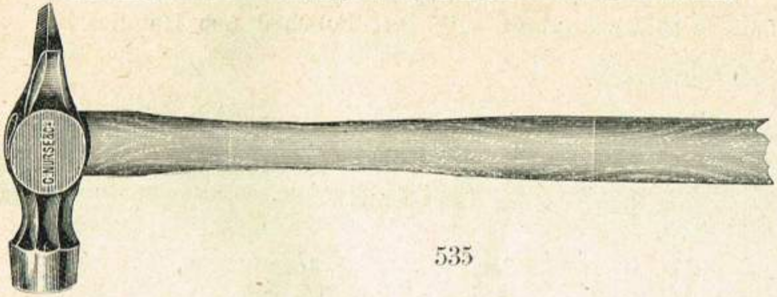
No. 2. Ditto.
20 by 3in. to 24 by 4in., 20/-

No. 3. Ditto.
24 by 5in. to 36 by 5in., 25/-

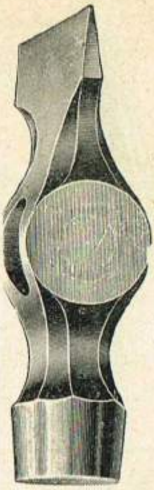
The No. 1 size is that in most demand for Technical Schools.

Hammers.

Best C.S. Handled Warrington Hammers.



535

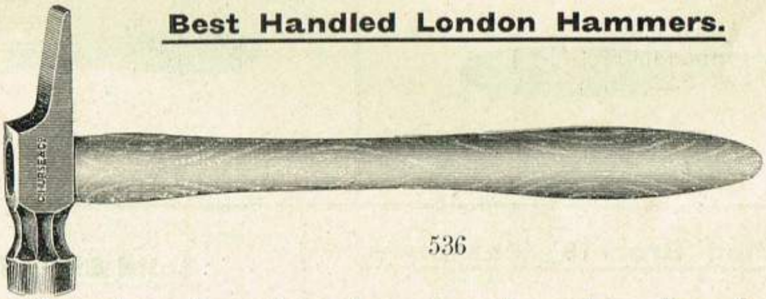


535H Heads only.

535 Best Quality.

	Nos.	0	1	2	3	4	5	6	7	8	9	10	12
	Price	11d.	1/-	1/1	1/2	1/4	1/6	1/8	1/10	2/-	2/6	2/9	3/3 each.
535B	Do. All Bright	1/4	1/6	1/8	1/10	2/-	2/3	2/6	2/9	3/-	—	—	— "
535H	Heads only	—	10d.	11d.	1/-	1/2	1/3	1/5	1/6	1/8	2/2	2/4	2/10 ,,

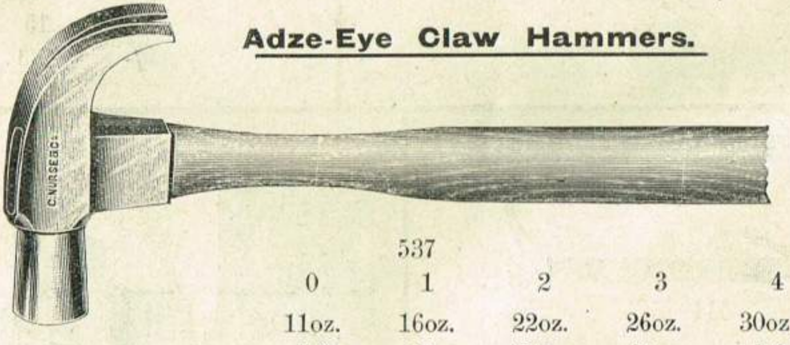
Best Handled London Hammers.



536

	Nos.	0	1	2	3	4	5	6	7	8	9	10
	Price	8d.	9d.	10d.	1/-	1/2	1/4	1/6	1/8	1/10	2/-	2/3 each.
536H	Heads only	6d.	7d.	8d.	10d.	1/-	1/1	1/3	1/4	1/6	1/8	1/10.

Adze-Eye Claw Hammers.

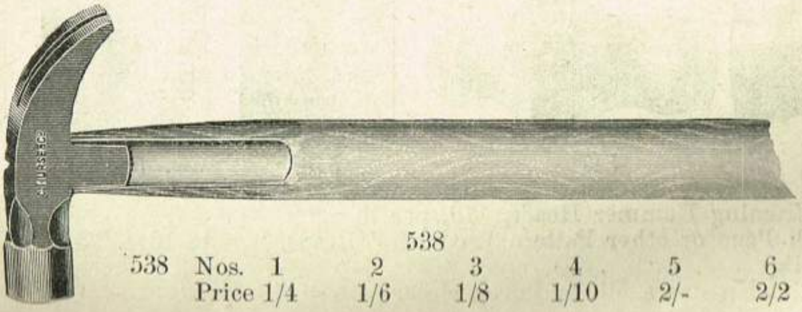


537

0	1	2	3	4
11oz.	16oz.	22oz.	26oz.	30oz.
1/9	2/-	2/6	3/-	3/6 each.

These hammers are forged from the Best Refined Crucible Cast Steel. Equal quality is improbable, but a better quality is impossible.

Best Canterbury Hammers, with Polished Oval Handles.



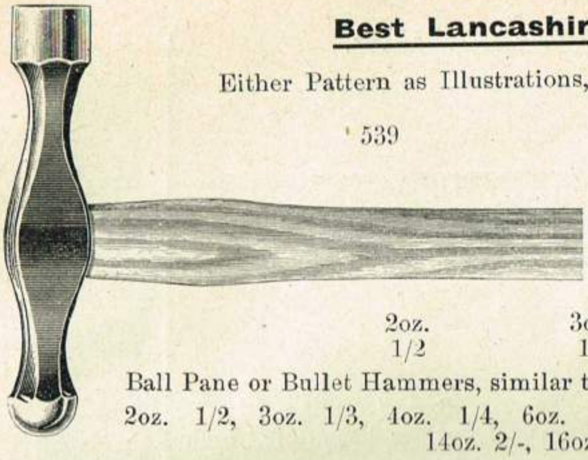
538

538 Nos.	1	2	3	4	5	6
Price	1/4	1/6	1/8	1/10	2/-	2/2 each.

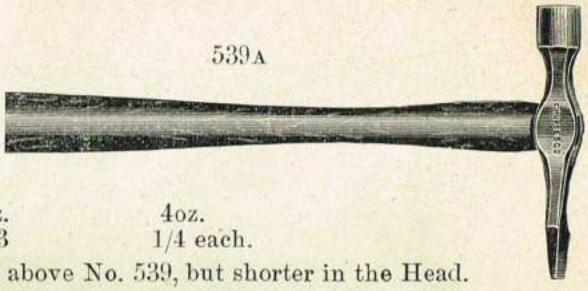
Hammers—*continued.*

Best Lancashire Pin Hammers.

Either Pattern as Illustrations, with Best Polished Ash Handles.



539

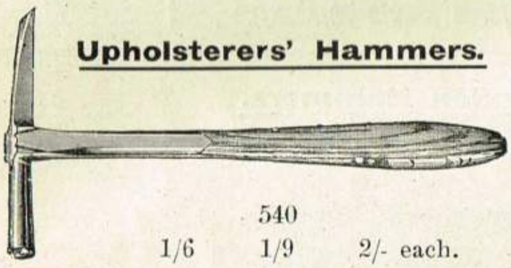


539A

2oz.	3oz.	4oz.
1/2	1/3	1/4 each.

Ball Pane or Bullet Hammers, similar to above No. 539, but shorter in the Head.
2oz. 1/2, 3oz. 1/3, 4oz. 1/4, 6oz. 1/5, 8oz. 1/6, 10oz. 1/8, 12oz. 1/10, 14oz. 2/-, 16oz. 2/2 each.

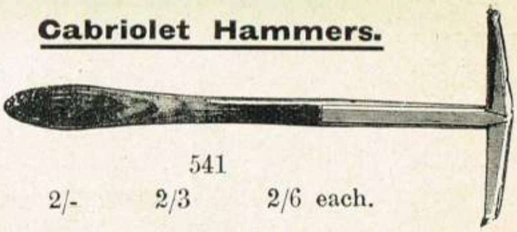
Upholsterers' Hammers.



540

1/6 1/9 2/- each.

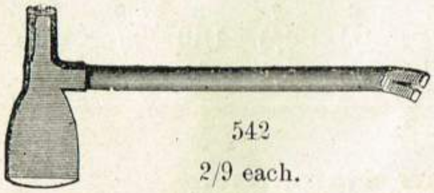
Cabriolet Hammers.



541

2/- 2/3 2/6 each.

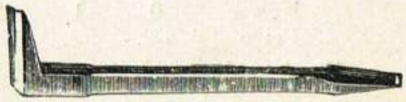
Iron-Handled Grocers' Hammers.



542

2/9 each.

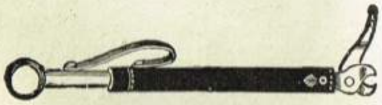
Solid Steel Case Openers.



543

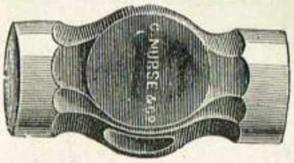
12	15	18 in.
2/-	2/3	2/6 each.

Nail Pullers or Case Openers.



544

544 Medium Size, 2/6 ; Large Size, 3/6 ; Extra Size, 4/6 each.
545 Improved Pattern American Make, 4/6 each.



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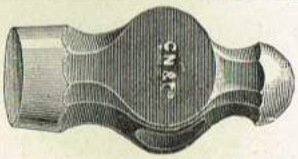

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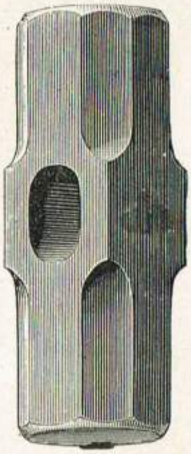
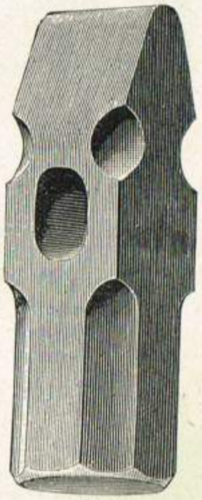


548



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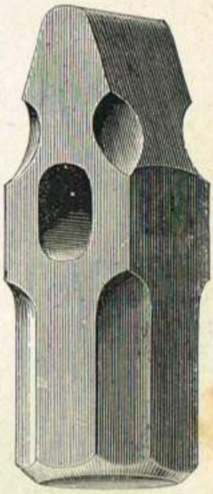


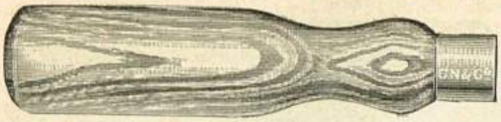
548

546 Best Coach Framing Hammer Heads, 11d. per lb.
547 Best C.S. Ball Pane or other Pattern Engineers' Heads, 8oz. to 16oz., 9d. each ; 1¼lb. and over, 8d. per lb.
548 Best C.S. Sledge Hammers, 5lb. and over, either pattern, 5d. per lb.

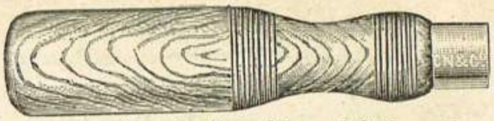
Handles (Chisel).

(ASSORTED FROM $\frac{7}{16}$IN. UP TO $\frac{13}{16}$IN. FERRULES.)

549

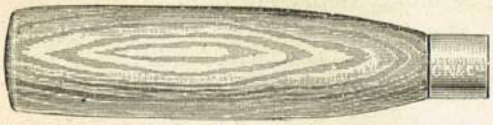


551

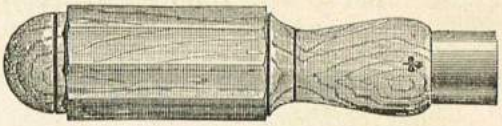


549 Best Quality Round Ash ... 1/6 per doz., assorted. Large size, ⅞in. to 1in., 2d. and 2½d. each.

550, 552, 553



554

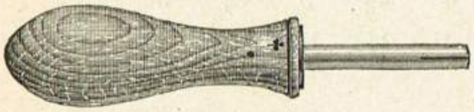


550	Best Quality	Ash Carvers' Pattern ...	1/6	per doz. assorted.	Large size	2d. and 2½d. each.
551	Ditto	Round Boxwood Handles	2/9	,, ,,	,, ,,	3½d., 4d., and 4½d. each.
552	Ditto	Boxwood Carvers' Pattern	2/6	,, ,,	,, ,,	3d., 3½d., and 4d. ,,
553	Ditto	Rosewood Carvers' Pattern	2/6	,, ,,	,, to ¾in.	
554	Ditto	Octagon Boxwood	4/-	,, ,,	,, ,,	6d., 7d., and 8d. ,,
555	Ditto	Boxwood Sash Mortice Chisel Handles			... ...	4d., 4½d. 5d., and 6d. ,,

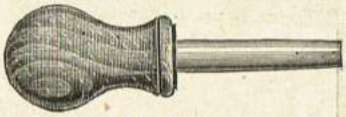
557

560

556	Best London-made	Oval Beechwood Mortice Chisel Handles	4d. each.
557	Ditto ,, ,,	Socket Chisel Handles, Ash...	2d. ,,
558	Ditto ,, ,,	,, ,, ,, with strong Iron Ferrule...	3½d. ,,
559	Ditto ,, ,,	Lignum Vitæ Socket Chisel Handle	6d. ,,
560	Ditto ,, ,,	Polished Beech Turning Tool Handles, 7in., 2½d.; 8in., 3d.; 9in., 3½d.; 10in., 4d.; 11in., 5d.; 12in., 6d. each.	

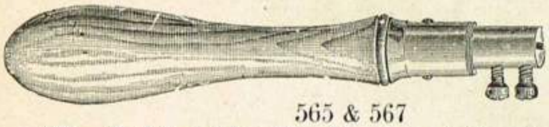


561 to 563

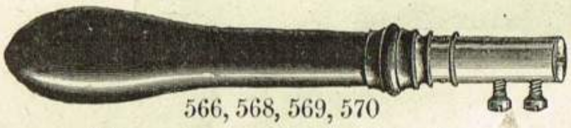


561 to 563

561	Bow Saw Handles,	10in. to 14in.	Round Beechwood	1/-	per pair	Ditto 16in. 1/3 per pair.
562	Ditto	10in. to 14in.	Round Boxwood	1/3	,,	Ditto 16in. 1/6 ,,
563	Ditto	10in. to 14in.	Round Ebony	1/6	,,	Ditto 16in. 1/9 ,,
564	Ditto	10in. to 14in.	Octagon Boxwood	1/8	,,	Ditto 16in. 2/- ,,



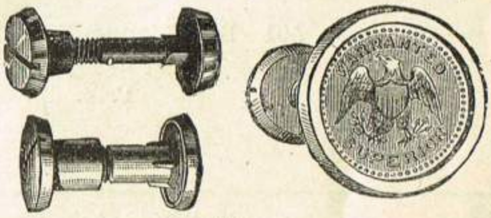
565 & 567



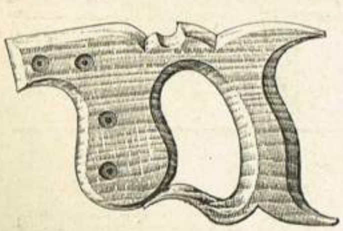
566, 568, 569, 570

559

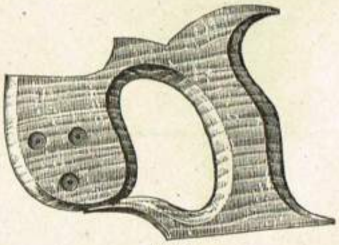
565	Pad Saw Handles, Beechwood, Small ...	10d. each.	566	Ditto, Large ...	1/- each.
567	Ditto Rosewood ,, ...	1/- ,,	568	Ditto ,, ...	1/4 ,,
569	Ditto Best Boxwood	1/8 ,,			
570	Ditto Best Ebony	2/- ,,			



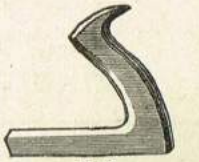
575



571



572



578

579

571 Best Plain Beech Hand Saw Handles 9d. each.

572 Ditto Back Saw Handles, Small 8d. ,, Large 9d. each.

573 Ditto Compass Saw Handles 6d. ,,

574 Brass Screws and Nuts for Saw Handles, 1d. each.

575 Improved American Brass Socket Saw Screws ... ... 1d., 1½d., 2d., and 3d. each.

576 Handles for Messrs. Disston & Sons' American Hand Saws, to suit Saws, No. 8, 1/6 each, No. 8D, 1/ each, No. 12, 2/6 each.

577 Handles for Messrs. Disston's Back Saws ... 1/- each.

578 Jack Plane Handles ... ... 2½d. and 4d. ,,

579 Try Plane Handles ... ... 4d. and 6d. ,,

Handles—Various.

580

581

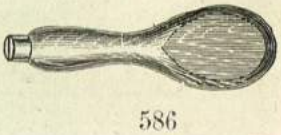
580 Hammer Handles, Ash, to 14in. 2d., 16in. 2½d., 18in. 3d., 20in. 3½d. each.
581 Ditto Hickory, to 14in. 2½d., 16in. 3d., 18in. 3½d., 20in. 4d. each.

582

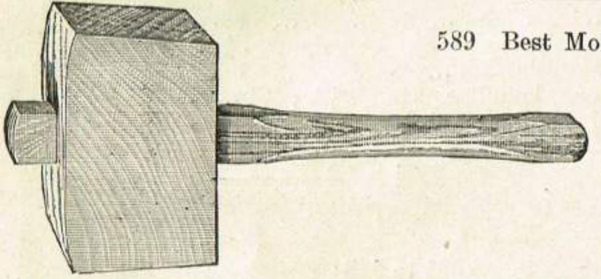
582 Sledge Hammer Handles, 36in. 8d.
583 Flooring Awl Handles, Ash 2d.
584 Bradawl Handles, Ash 1d., Boxwood 1½d.
585 File Handles, assorted sizes, 1d. each.

	½	⅝	¾	13/16	⅞	1 in.
586 Flat Beech Turnscrew	2½d.	3d.	3½d.	4d.	5d.	6d.
587 Oval Beech ditto	4½d.	5d.	6d.	8d.	10d.	1/-
588 Oval Boxwood ditto	6d.	8d.	10d.	1/-	1/3	1/6

Sizes mentioned are the width of Ferrules.

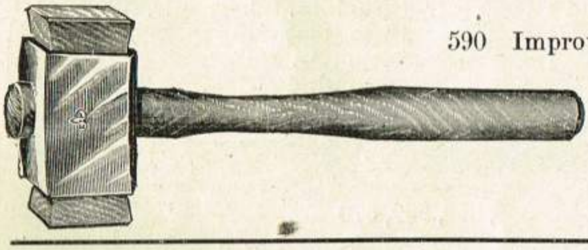

586

Mallets.



589 Best Mortised Beech Joiners' Mallets.

4	4½	5	5½	6	6½	7in.
10d.	1/-	1/2	1/4	1/6	1/9	2/- each.

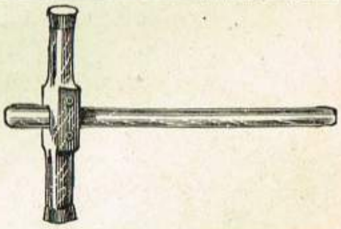


590 Improved Iron Bound Mallets.

Nos. 1	2	3
2/-	2/6	3/- each.

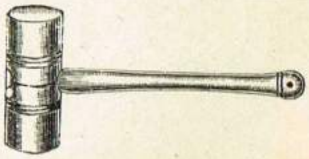
591 Best Lignum-Vitæ Caulking Mallets.

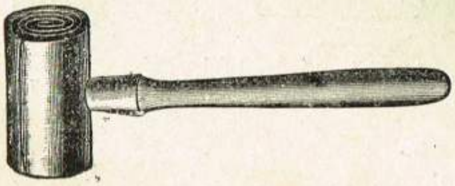
Price 1/6 each.



592 Round Ash Tinmen's Mallets.
8d. each.

Round Boxwood Ditto.
1/-, 1/3, and 1/6 each.





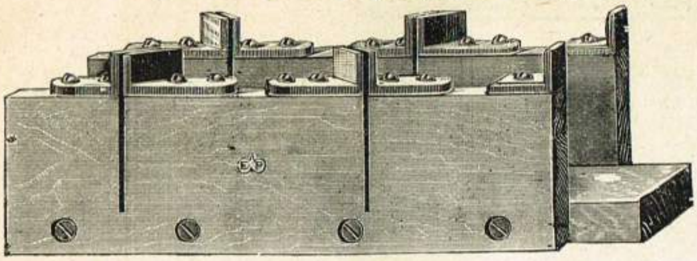
593 Raw Hide Mallets.

Diameter	1	1¼	1½	1¾	2in.
Prices	1/-	1/3	1/6	1/9	2/3 each.

These are light Mallets, made entirely of raw hide, and suited to a variety of uses.

Mitre Blocks, Boxes, Boards, etc.

Adjusted to any gauge of Saw.



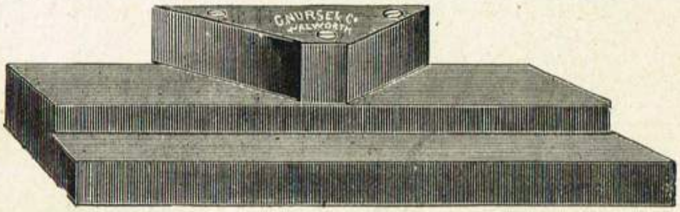
595

594 Best Beechwood Mitre Boxes, 12in. 2/-, 15in. 2/6, 18in. 3/- each.

595 Improved Adjustable Mitre Box, with Malleable Iron Saw Guides to take in mouldings up to 3in. wide. Price 2/9 each.

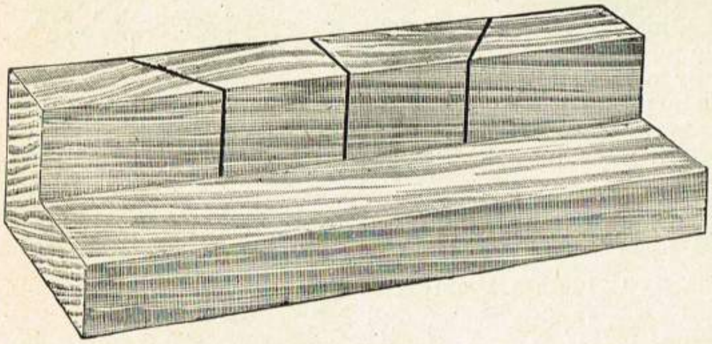
596 Best Beechwood Mitre Shooting Boards, as illustration, 10in. 2/-, 12in. 2/6, 14in. 3/3, 16in. 4/-, 18in. 5/- each.

597 Best Picture Frame Makers' Mitre Boards, with 17in. Extension Arms, Boards 24in. by 10in., 12/- each.



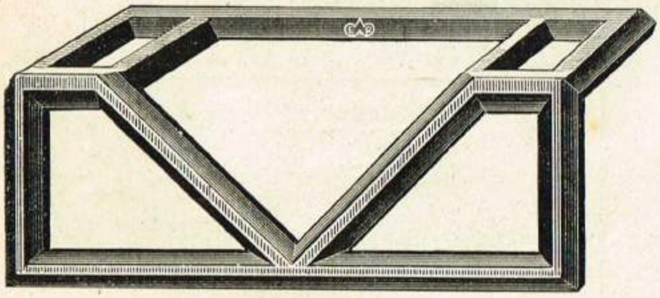
596

London-made Beech Mitre Blocks.



598 Best Beechwood Mitre Blocks, 9in. 1/-, 12in. 1/3, 16in. 1/9 each.

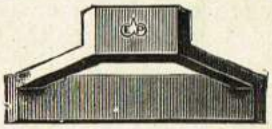
Mitre Templets.



599

599 Improved Iron Mitre Templets, 1/3 each.
600 Beechwood Mitre Templets, 6d. and 9d. each.

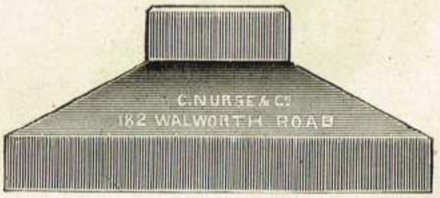
Brass Mitre Templets.



601

3	4½	6in.
1/3	1/6	2/- each.

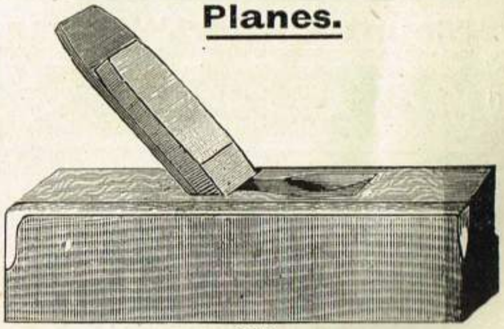
London-made Brass Mitre Templets.



602

3½	4½	5½	6in.
1/6	2/-	2/6	3/6 each.

London-made Mitre Planes.

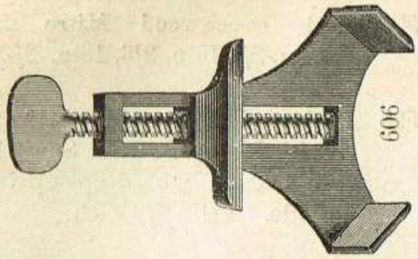


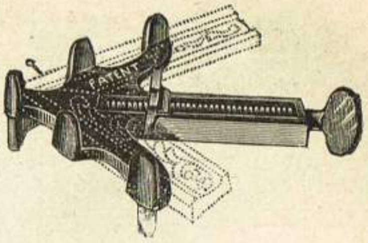
603

603 Mitre Shooting Planes, as illustration, 1½in. 2/6, 1¾in. 2/6, 2in. 2/6, 2¼in. 3/- each.
604 Picture Frame Makers' Mitre Planes, with Scroll Wedge, 20 by 2¾in. 8/6, 22 by 3in. 10/6, 24 by 3¼in. 12/6 each.
605 Ditto, with Steel Face full length of Plane, 20 by 2¾in. 21/-, 22 by 3in. 24/-, 24 by 3¼in. 27/6 each.

Mitre Cramps, Cutters, etc.

Corner Cramps.





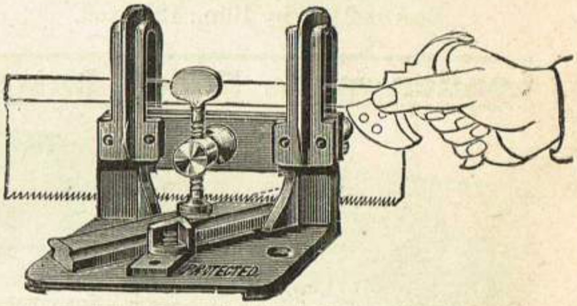
		Nos. 1	2	3
606	Corner or Picture Frame Cramps, will take Mouldings to	1¼	2¼	4in.
		1/9	2/4	3/6 per Pair.
607	Improved New Pattern Ditto Ditto	2/3	3/-	4/- ,,

The Improved Pattern will be found more convenient and reliable.

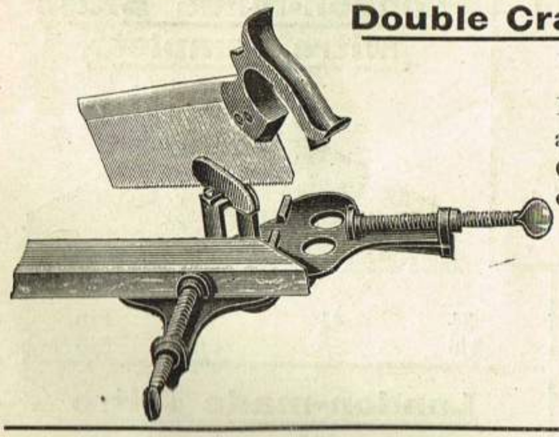
Combination Mitre Cutter and Saw Vice.

608 New Improved Combined Mitre Cutter and Saw Vice. Advantages—Light, Durable, Adjustable. Price 7/6 each.

This Cutter is made entirely of Iron, and is arranged to take any ordinary Hand or Back Saw. The two planed iron plates between which the saw works are adjustable to any thickness of blade, so that it is impossible for the saw to cut otherwise than perfectly upright. By reversing position of saw and tightening the front plate by means of the two screws, a very efficient vice is provided for anyone desirous of sharpening their own saws. Will take moulding up to 2½in.



Double Cramp and Adjustable Mitre Cutter.



609 Picture Framing made easy by the use of our Patent Double Cramp and Mitre Combined, which will admit any size saw. This will cut a true Mitre and Cramp Corners for gluing and nailing; can also be used for cutting Piping or anything requiring a true Mitre.

No. 0.	Old Pattern, with Spring	5/- each.
No. 1.	Improved, for Mouldings up to 3in.	6/6 ,,
No. 2.	Improved, for Mouldings up to 5½in.	8/6 ,,

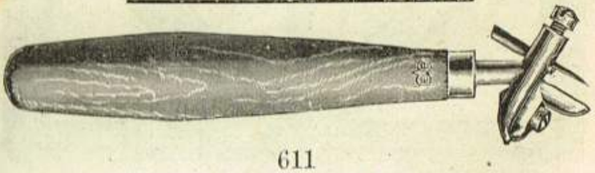
ADJUSTABLE.

Mount Cutters' Knives.

610
E. PRESTON & SONS TRADE MARK

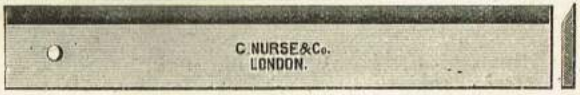
610	With Rosewood Handle ...	1/9 each.
610E	Ebony-handled Plated ditto ...	2/6 ,,
610B	Blades only	6d. and 9d. ,,

Rebating Gauge.



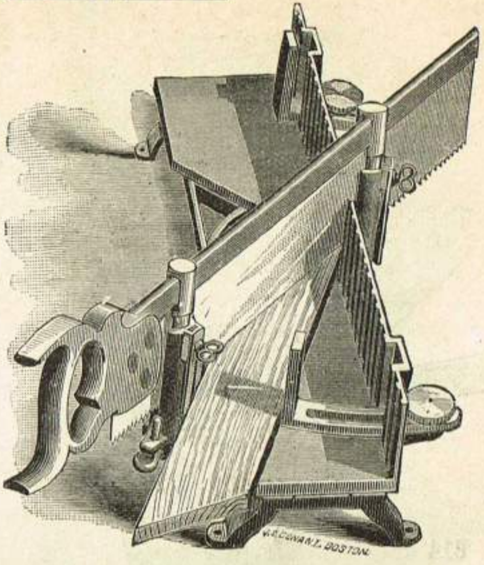
611
Adjustable Knife and Fence.
Price, 1/4 each.

Mount Cutters' Straight Edges.



			18in.	24in.	30in.	36in.
611S.E.	No. 90C	1¼in. by ⅛in.	2/6	3/-.	1½in. by ⅛in., 4/6	1¾in. by ⅛in., 6/6
612S.E.	No. 91C	1½in. by ¼in.	4/6	6/6	1½in. by ¼in., 8/-	1¾in. by ¼in., 10/6

New Langdon Mitre Box Improved.



Ordinary Mitre Boxes cut from right angles to 45 degrees inclusive.

The New Langdon Improved cuts, by using the circular arms or guides, from right angles to 75 degrees, on 2½in. stuff, varying more or less with width of stuff.

The only box adjustable for mitreing circular work in patterns, wheels and segments of various kinds.

N.B.—Saws are measured extreme length of blades. For convenience of the operator, the corner of blade under the handle is clipped off.

Directions.

The positive angles of the **New Langdon,** as notched in the segment, are the same as in the Langdon Mitre Box.

The **New Langdon** has the **additional** feature of easy adjustment to **any possible angle desired.**

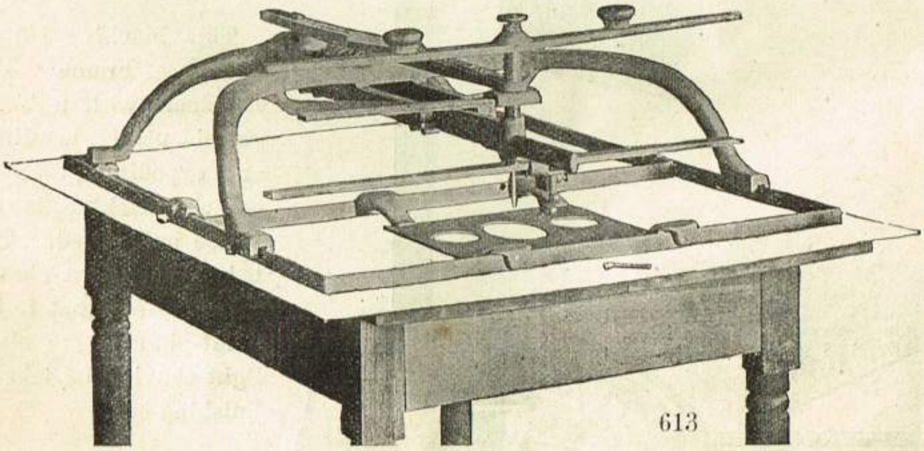
Find the angle wanted by setting a bevel as required, then move the saw so that the angle formed by the saw and the back of the box shall conform to the bevel, fasten the saw in place by turning down the screw in the grooved rest or gib. This will hold the saw strongly in place for the time being, and a turn of the screw backward will place it in order again for the segment angles.

Prices.

612	Cutting 6¾in. at right angles,	4½in. at mitre	...	Saw, 20 by 4in.	...	with Saw, 40/-
612A	„ 9½in. „ „	6½in. „	...	„ 24 by 4in.	...	„ 50/-each.

The "STARR" Oval and Circle Cutting Machine.

Swivel Action Cutters.



PATENTED.

For cutting Ovals or Circles, Bevel out or in, or Straight Edge in picture mats, etc.

For cutting Glass, Circular or Oval Shape.

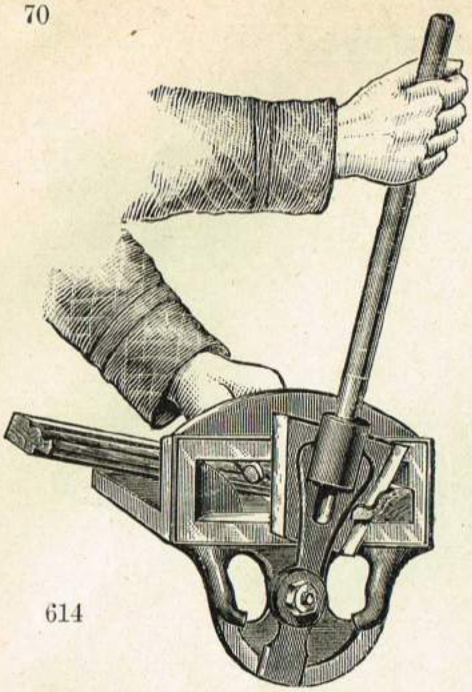
For cutting Leather Paper, Photographic Prints.

It will cut Any Size Oval from 1in. by 1½in. up to 24in. by 40in.

It will cut Any Size Circle from 1in. up to 24in. in diameter.

Automatic in its movement, a Perfect working Machine, Smooth and Regular in its action, Easy to Understand and Manipulate. Fully Guaranteed.

Price, £6 6s. net.



614

Mitre Machines.

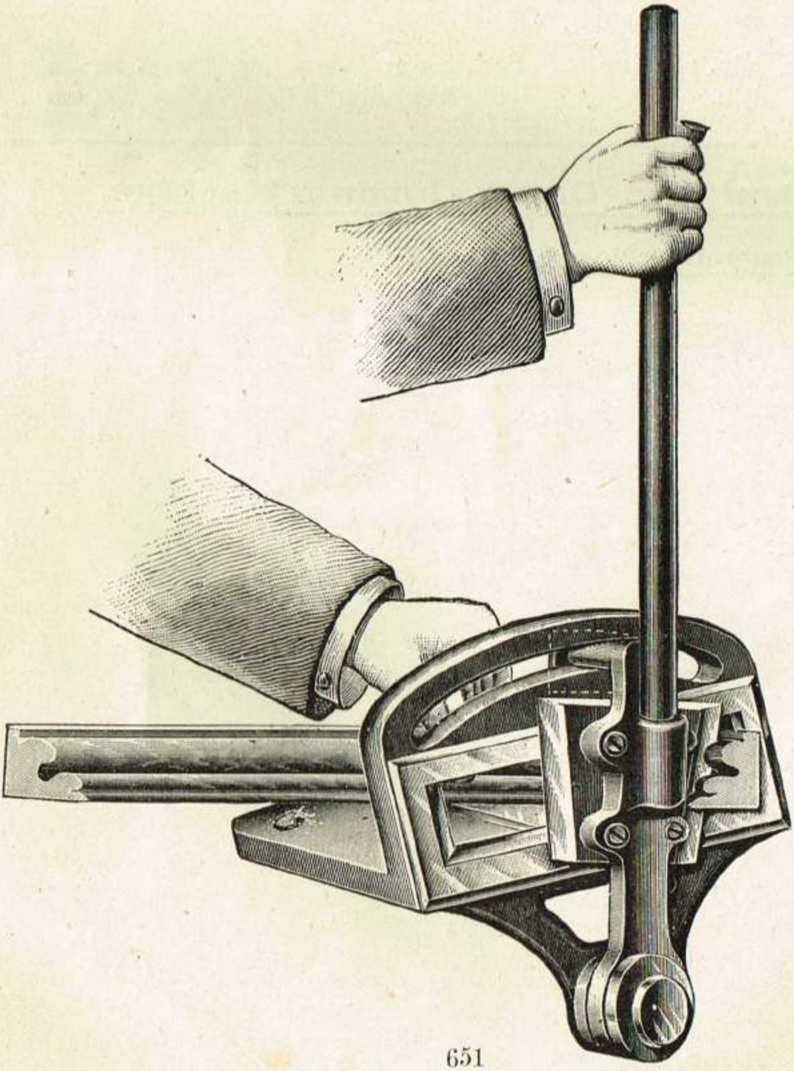
614 MITRE CUTTING MACHINE No. 1.

Weight 14lb. To cut 2in. Mouldings.
Price 12/-. Extra Cutters, 2/3 each.
Packing Case, 6d.

614A MITRE CUTTING MACHINE No. 2.

Weight 34lb. To cut 4in. Mouldings.
Price 21/6. Extra Cutters, 4/- each.
Packing Case, 9d.

Improved Pattern Mitre Machines.



651

The Improvement consists in the semi-circular slot at top of frame, through which a guide-pin passes and provides a firm fastening to the cutter blades, and ensures a more regular and accurate cut. The Cutters also are divided, and are securely fastened to the lever casting.

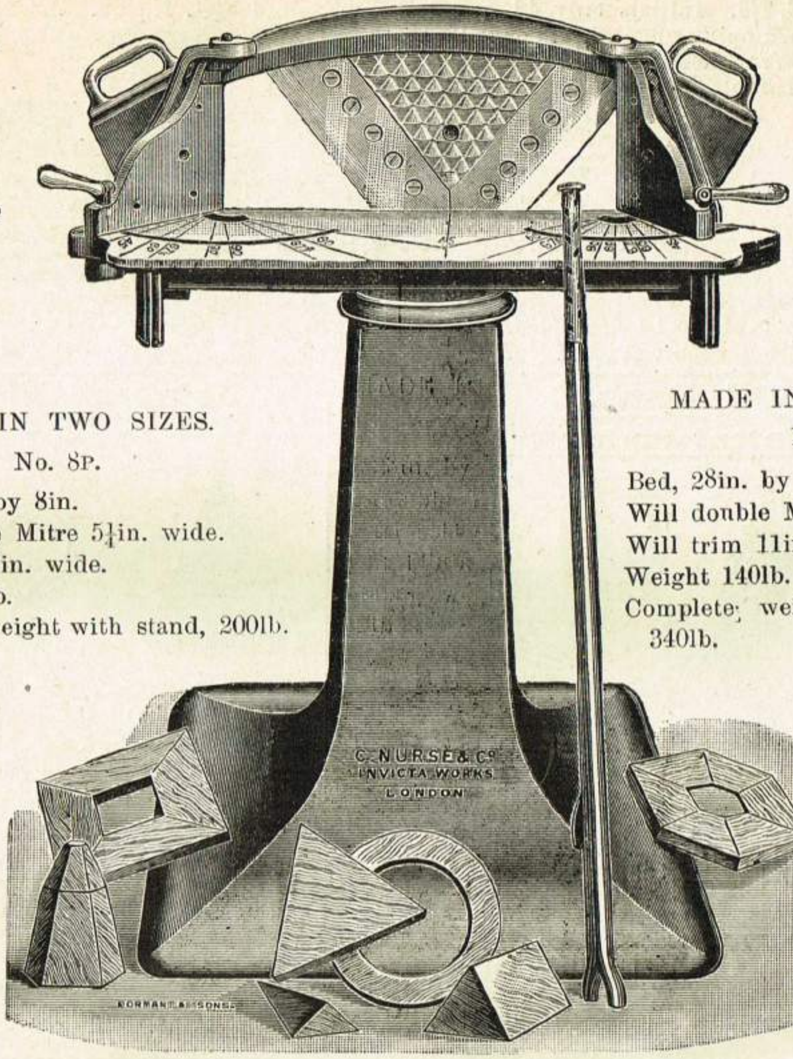
This Machine supplies Joiners, Picture Frame Makers, and Amateurs with a Tool which, for general utility, handiness, accuracy, and expedition, cannot be excelled—each machine is carefully adjusted and tested. The moulding is held as shown above, care being taken to see that it bears against guide-pin at back; also that a very light shaving be taken off for the finishing cut.

No. 1.—Cutting 2in. Mouldings. Price 14/6 each. Extra Cutters, 2/6 per pair. Packing Case, 6d. extra.

No. 2.—Cutting up to 4in. Mouldings. Price 25/- each. Extra Cutters, 5/- per pair. Packing Case, 9d. extra.

The "PERKINS" Draw Stroke Trimmer.

The use of The "Perkins" Draw Stroke Trimmer Improves the Work and Increases the Product.



616

MADE IN TWO SIZES.
No. 8P.

Bed, 20in. by 8in.
Will double Mitre 5¼in. wide.
Will trim 7in. wide.
Weight 60lb.
Complete weight with stand, 200lb.

Price

£5 : 0 : 0.

Stand, Extra

£1 : 16 : 6.

Carriage Forward.

MADE IN TWO SIZES.
No. 13P.

Bed, 28in. by 13in.
Will double Mitre 7½in. wide.
Will trim 11in. wide.
Weight 140lb.
Complete weight with stand, 340lb.

Price

£9 : 10 : 0.

Stand, Extra

£2 : 10 : 0.

Carriage Forward.

In Comparison with all Similar Tools, the "Perkins" Draw Stroke Trimmer combines superiority in possessing.

A drawing or shaving as well as shearing movement of the knife when cutting, imparting a finish to the work obtainable in no other way.

An operating handle, adjustable to suit work or convenience of operator.

A wing held at top and bottom ; rigid and unchangeable in its relation to the knife cut, and easily adjusted in its angle to the plane of knife travel, shifting from 45deg. to 105deg.

A wing having adjustable stops to determine angle stock is to be cut at, and doubling the width of stock mitreable on it.

Operated on a bench or on a standard (as shown)—easily shifted from one to the other.

The "PERKINS" Draw Stroke Trimmer.

It is not a Pattern Maker, but it is an Assistant to every Pattern Maker using it. It is not a Wood Worker, but it is an Assistant to all Bench Wood Workers, Carpenters, Builders, and Contractors, lessening their labour, increasing their output, and insuring accurate work.

This Ingenious Labour-saving Device is essentially a Bench Tool or an Adjunct of the Bench.

The depth of the cut is not gauged—dispensing in a measure with a saw and chisel. The lightest shaving, for finishing a joint, may be cut—dispensing with the plane.

The swinging gauges or wings determine the angle the work is to be cut at—dispensing with the try-square and straight-edge.

Vertical and horizontal lines are cut accurately without testing or measuring ; in fact, the "Perkins" Draw Stroke Trimmer, is the best tool out for saving on general woodwork, and for making perfect joints.

Name Stamps and Burn Brands.

617 Best Quality Name Stamps sent free by post to any address, ⅛in. letters 3d. per letter. Example—C. NURSE, 1/6. Initials only 4d. per letter. Example—C. N., 8d. Above, if made extra strong for stamping metal, 1½d. per letter extra.

618 Best Quality Wrought Iron Burn Brands—

⅜in.	Letters,	2 Initials	3/-	3 Initials	4/-	Extra Letters	6d. each.
½in.	,,	2 ,,	3/6	3 ,,	4/6	,,	8d. ,,
⅝in.	,,	2 ,,	4/-	3 ,,	5/-	,,	10d. ,,
¾in.	,,	2 ,,	5/-	3 ,,	6/6	,,	1/2 ,,
⅞in.	,,	2 ,,	5/6	3 ,,	7/6	,,	1/4 ,,
1in.	,,	2 ,,	6/6	3 ,,	8/6	,,	1/6 ,,

These are made with Ring Handles, and Prices are for Brands complete.

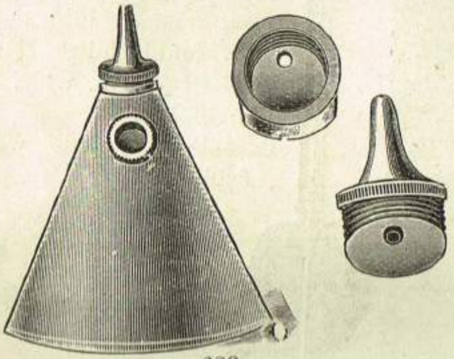
619	Sets of Steel Letters or Alphabets	⅛in. 8/6	¼in. 13/6	⅜in. 21/-
620	Sets of Steel Figures, 9 to set	⅛in. 3/-	¼in. 4/6	⅜in. 7/-
621	Extra Strong Sets of Steel Letters	⅛in. 11/6	¼in. 16/-	⅜in. 25/-
622	Extra Strong Sets of Figures, 9 to set	⅛in. 4/-	¼in. 5/6	⅜in. 8/6

619 and 621.

620 and 622.

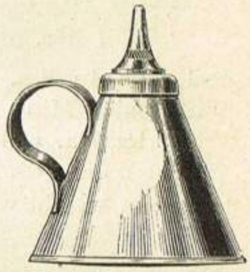
Oil Cans.

Improved Patent Spring Oil Cans.


623

Joiners' Oil Cans.

624


625

624 Joiners' Oil Cans with tin bottom ... ... 3d. each.
Ditto with brass bottom ... 4d. ,,
625 Ditto with extra wide mouth as illustration ... 6d. and 8d. ,,

In introducing this Oil Can to the public the patentees feel confident it will meet with the approval of all who use it. Joiners, Carpenters, Cabinet Makers, and others will find it a great benefit and saving to them, as they can put it in their tool bags without fear of them becoming saturated with oil.

It is also simple in construction, and no part can get out of order.

The benefit of this Oil Can is that when the brass nozzle is screwed down to the bottom of the socket, you cannot possibly get the oil out. But by unscrewing the nozzle a little, you make a space between it and the bottom of the socket, thus enabling you to get the oil out freely.

623 Price 8d. Specimen Can, Post free, 10d.

Copperized Steel Oilers.

With Improved Steel Spring Bottoms.

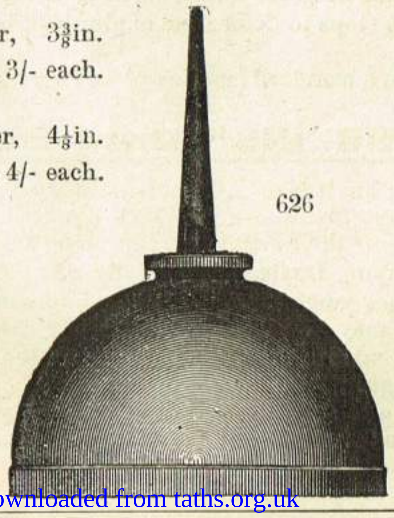
626	No. 12,	Steel Oiler, 2¾-in.	diameter, 2½-in.	nozzle,	1/-
627	,, 13A,	,, ,, 3⅜ ,,	,, 5 ,,	,,	1/3
628	,, 14B,	,, ,, 3¾ ,,	,, 9 ,,	,,	1/9
629	,, 16	,, ,, 4⅛ ,,	,, 9 ,,	,,	2/-

630 No. 10. 1-pint Railroad Oiler, 3⅜in. diameter, 5in. high, 12in. nozzle, 3/- each.

631 No. 11. 1-quart Railroad Oiler, 4⅛in. diameter, 6in. high, 18in. nozzle, 4/- each.

ENGINEERS' SETS IN
SINGLE BOTTOM TRAY.

632 Set of 5 Copperized Steel Oilers, complete, in round tray, 10/6 per set.

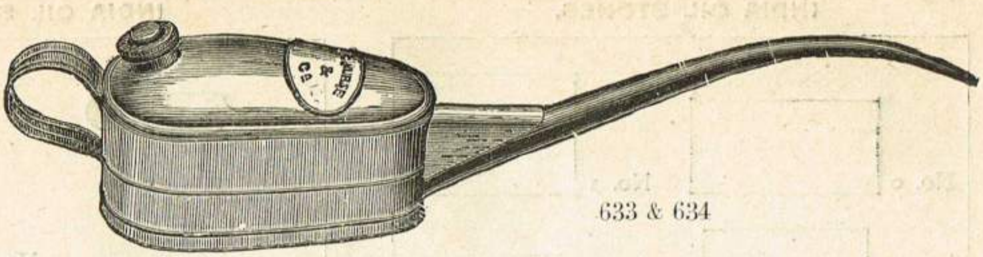

626

Cycle Oil Cans.

633

Secure Pocket Oil Cans, 4d.

Oil Cans—*continued.*



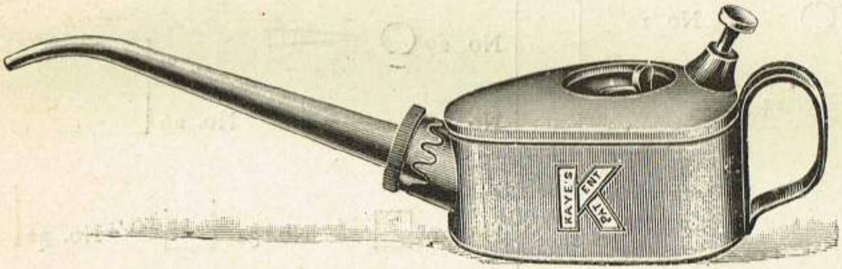
633 & 634

633 Engineers' Long Spout, ¼ pint 1/3, ½ pint 1/6, ¾ pint 1/9, 1 pint 2/-

634 Improved ditto, with Copper Spout, ¼ pint 1/6, ½ pint 1/9, ¾ pint 2/-, 1 pint 2/3.

Kaye's Patent Steel Seamless Oil Cans,

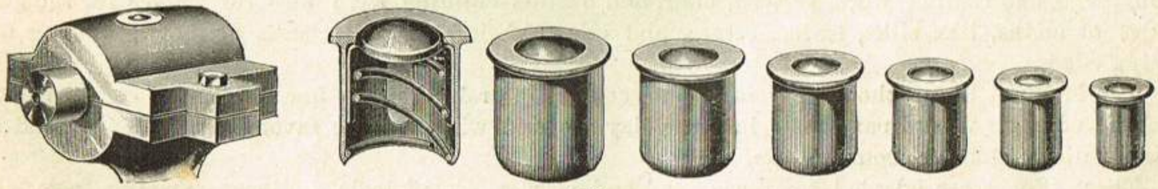
With Interchangeable Screwed Spouts.



635

Capacity.	No.	Length of Spouts.	With Interchangeable Spouts.	Copper or Brass Spouts.	Extra New Seamless Tin Spouts.	Extra New Copper Spouts.
⅓ pint	7K	5in.	1/9	2/-	2½d. each	4d.
½ „	8K	6in.	2/-	2/3	3½d. „	5d.
¾ „	9K	6in.	2/3	2/6	3½d. „	5d.
1 „	9½K	7in.	2/9	3/-	4½d. „	6d.
1½ „	10K	10in.	3/3	3/6	6d. „	8d.

Bennett's "Handy" Oiler.



636

ADVANTAGES—

Simplicity. ***Neatness.*** ***Ease of Application.*** ***Efficiency.*** ***Cheapness.***

To apply them it is only necessary to drill the oil-hole the proper size and force the oiler in. The oil is inserted by pressing the oil-can upon the valve, which closes by a spring when the can is removed.

The oiler projects but little above the surface, making it convenient to clean and wipe over, and giving it a neat and attractive appearance.

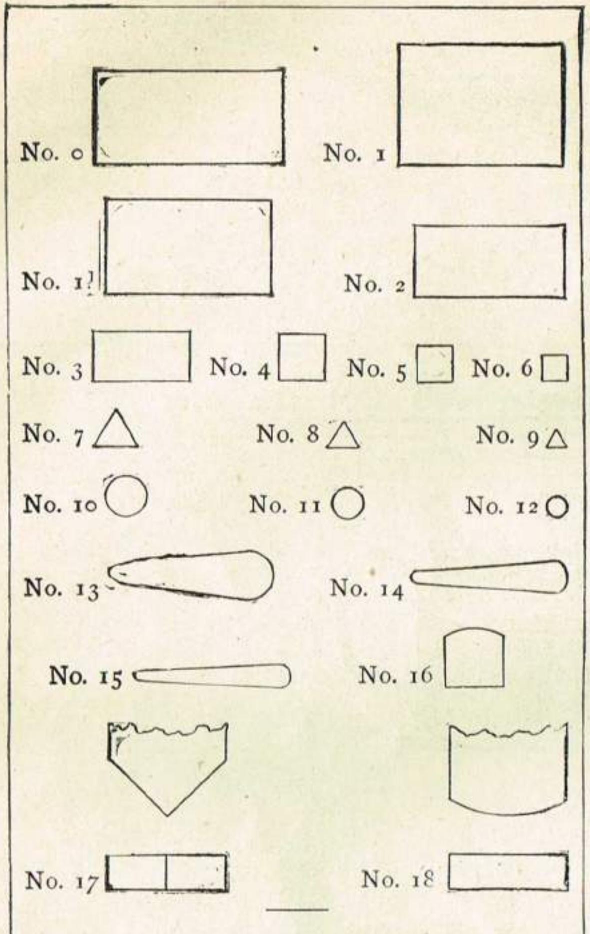
It is made of three pieces—a case, valve, and spring—the valve being made with projecting arms to guide it centrally and allow the oil to pass by.

Made in 7 Sizes, ¼in. to ⅝in. with variation of $\frac{1}{16}$in.

Price, all Sizes, 2/- per doz. 21/- per gross.

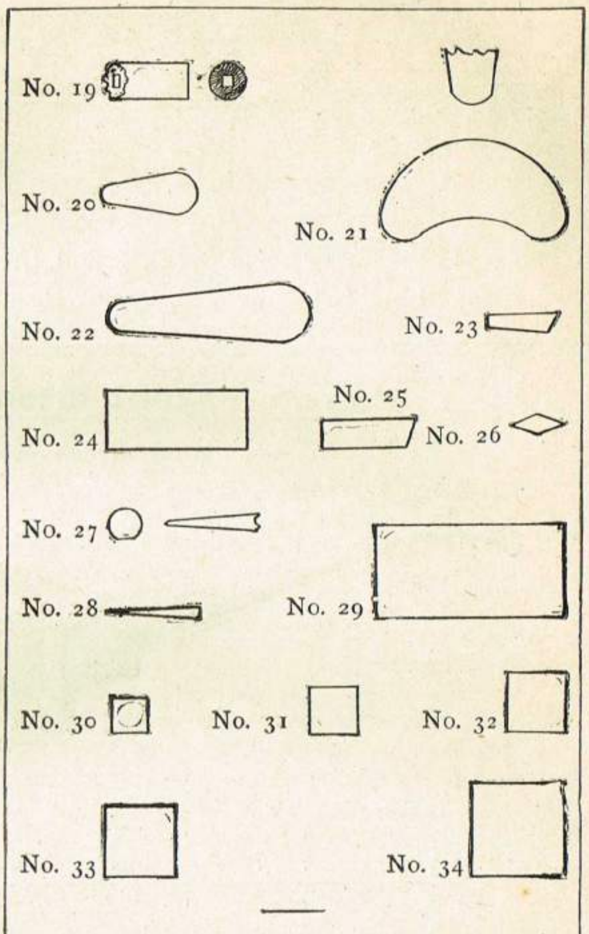
India Oil Stones.

INDIA OIL STONES.



End views—Scale, one-half.

INDIA OIL STONES.



End views—Scale, one-half.

The India Oil Stones illustrated above are made in three grades—Fine, Medium, and Coarse. The Fine Stone is fast cutting and close grained, leaving a smooth, keen edge on the hardest and finest of steel tools, giving results equal to any obtained on the regular trade line of Arkansas Stones now on the market. They are adapted for all descriptions of high class wood and metal-working tools, such as in piano and cabinet work, pattern, stair, and mantel-building, &c. ; also for knives for the finer grades of cloths, like silks, satins, serges, and other fabrics; and all classes of tools requiring fine cutting edges.

The Medium Stone, though several grades coarser in grain than the fine Stone, still makes a good working edge on all ordinary tools in every-day use, and will compare favourably with and lead all other Medium Stones in common use.

These Stones are adapted for carpenters' and pearl workers' tools, ordinary scraping tools, also cloth, leather, rubber, and paper cutting machine or hand-knives, and will make a quick-cutting edge, although not quite as smooth as the Fine Stone.

The Coarse Stone, which is again several grades removed from the Medium Stone, is most in demand for work where speed is considered before fine finish, and if used under proper conditions will give surprising results on the class of work for which they are intended, viz., ordinary machine-shop or wood-working tools, where fast cutting is required without regard to fine finish ; also for rubbing stones, if used with plenty of water, oil, or other lubricants.

These stones will not work as well if used dry, on account of picking up small particles of steel or other metals, occasioned by their sharpness. If, however, they are thoroughly saturated with a lubricant (water will do, though oil will make smoother work), they will cut faster, last longer, and keep a better surface than any other stone on the market. Soak thoroughly in thin, clear oil. Rub the Stones on moist medium grade emery cloth if a new surface is desirable.

For Prices and Measurements see next page.

India Oil Stones—*continued.*

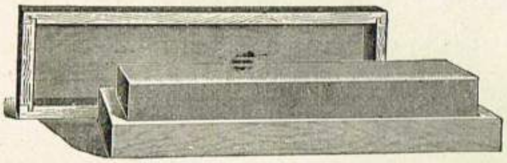
Shape.	Dimensions. Inches.	Prices, each. Coarse and Medium.	Prices, each. Fine.
0	8 by 2 by 1	4/-	6/-
1	8 ,, 1¾ ,, 1¼	4/-	6/-
1½	7 ,, 2 ,, 1	3/-	4/9
2	6 ,, 1⅝ ,, ¾	2/-	3/-
3	4 ,, 1 ,, ½	1/3	2/-
4	4 ,, ½ ,, ½	1/3	2/-
5	4 ,, ⅜ ,, ⅜	1/3	2/-
6	4 ,, ¼ ,, ¼	1/3	2/-
7	4 ,, ½ ,, ½	1/6	2/3
8	4 ,, ⅜ ,, ⅜	1/6	2/3
9	4 ,, ¼ ,, ¼	1/6	2/3
10	4 by ½	1/8	2/6
11	4 ,, ⅜	1/8	2/6
12	4 ,, ¼	1/8	2/6
13	4½ by 1¾ by ½, 3/16	1/3	2/-
14	4½ ,, 1¾ ,, ⅜, ⅛	1/3	2/-
15	4½ ,, 1¾ ,, ¼, 1/16	1/3	2/-
16	8 ,, ⅝ ,, ⅝	2/3	3/3
17	4 ,, 1¼ ,, ⅜	1/3	2/-
18	4 ,, 1¼ ,, ⅜	1/3	2/-
19	Engravers' Pencils, Fine one end, Medium the other	1/8	1/8

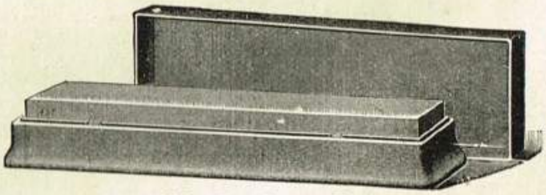
Shape.	Dimensions. Inches.	Prices, each. Coarse and Medium.	Prices, each. Fine.
20	4 by 1 by 7/16, 3/16	1/3	2/-
*21	Special Gouge Slip 6 by 2 by 1 by ⅜ by 3/16	—	2/3
*21½	Special Gouge Slip 9 by 3 by 1¼ by ¾ by ⅜	—	2/3
22	4½ by 2⅛ by ⅝ by 5/16	1/8	2/6
22½	6 ,, 2¼ ,, ¾ ,, ⅜	2/3	3/3
23	3½ ,, ¾ ,, 3/16 ,, ⅛	1/3	2/-
24	4½ by 1½ by ⅝	1/8	2/6
25	4½ ,, 1 ,, 5/16	1/3	2/-
26	4 ,, 9/16 ,, 3/16	2/3	3/3
27	Points, 3 by 5/16	2/3	3/3
28	Knife Blade, 4 by 1 by ⅛	2/3	3/3
29	6 by 2 by 1	2/6	3/9
30	6 ,, ⅜ ,, ⅜	1/8	2/6
31	6 ,, ½ ,, ½	1/8	2/6
32	6 ,, ⅝ ,, ⅝	1/8	2/6
33	6 ,, ¾ ,, ¾	2/3	3/3
34	6 ,, 1 ,, 1	2/3	3/3
	1 Set (4) Carver's Slips, 2¼ by ⅞ by 3/16	4/-	6/-
	Axe Stones, 2 by 2 by ¾	1/3	2/-

* Nos. 21 and 21½ are supplied in medium fine grade only.

Also our Two Special Sizes: A. 9in. by 2in. by 1in., 5/- B. 9in. by 1¾in. by 1in., 5/-

Mounted India Oil Stones.


637 In Polished Wooden Box.


638 In Iron Box.

Shapes 0, 1, 1½, 2, and 3 can be supplied in polished wooden boxes at a cost of 1/3 each extra.
Shapes 0, 2, and 29, in iron boxes, 1/3 each extra.

Combination Oil Stones.

639

These Stones are furnished with one face medium and one face coarse grade.

They are particularly useful on this account, as the coarse side can be used for sharpening dull tools, or on tools where fast work is required without regard to fine finish, while the medium side can be used when a finer edge is required, or for finishing after the coarse side has been used.

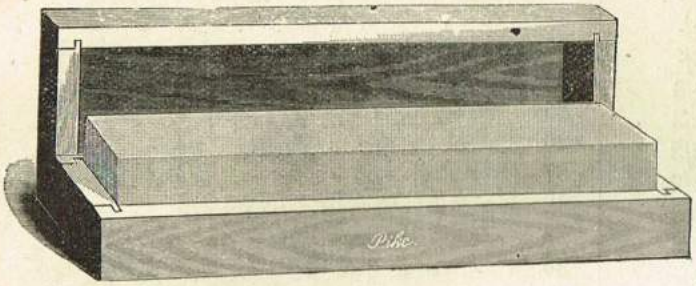
Shape.	Dimensions in Inches.	Price.
0	8 by 2 by 1	5/3
1	8 ,, 1¾ ,, 1¼	5/3
1½	7 ,, 2 ,, 1	4/3
2	6 by 1⅝ by ¾	2/9
29	6 ,, 2 ,, 1	3/3

Shapes 0, 1, 1½, and 2, mounted in polished wooden boxes, 1/3 each extra.
Shapes 0, 2, and 29, in iron boxes, 1/3 each extra.

Oil Stones and Slips—*continued.*

Best Washita Oil Stones.

640



641

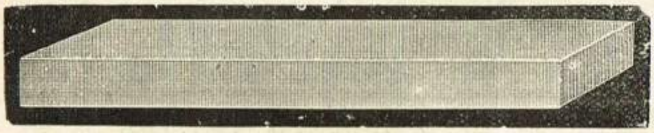
640 Best Lily White Washita Oil Stones. These are the best selection of the Extra Quality. It is perfectly white, of very even texture, free from foreign substances, and perfect in finish. We strongly recommend these Stones as being the most perfect and reliable Oil Stones that the world produces.

Prices... ...		2/6	3/-	3/6	4/- each.
Slips ...	6d.	8d.	9d.	1/-	1/3 „

641 Best Washita Stones, mounted in handsome Polished Cherry Boxes.

	6in.	7in.	8in.	9in.	10in.
Prices ...	3/-	3/6	4/-	4/6	5/- each.

Arkansas Oil Stones.



642 .

642 These Oil Stones are the best sharpening Stones known for Engravers, Watchmakers, Dentists, Surgeons, and others who use very fine edge tools. It is composed of pure silica, crystallised in a manner similar to the Washita, the crystals being, however, much smaller, harder, and more transparent. It is a high-priced Stone owing to the great expense attending its quarrying, as it is many times harder than common marble.

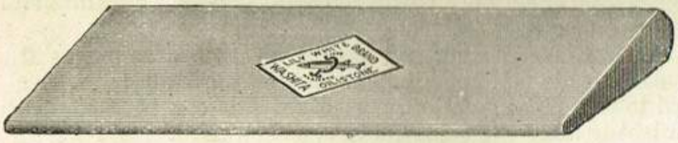
Prices	9/6	11/6	12/6	15/- each.

643 Small Arkansas Carving Tool Slips ... 1/- each Sets of 4 Assorted Patterns ... 3/3 per set.

	3½in.	4in.	5in.	6in.
644 Mounted Arkansas Square Edge Stones in Polished Cases ...	2/6	4/-	6/-	8/- each.

645	**Best Canadian Oil Stones...**	**6d.**	**8d.**	**10d.**	**1/-**	**1/3 each.**
646	**Charnley Forest Oil Stones**	**1/-**	**1/6**	**2/-**	**2/6 each.**	
647	**Yellow Lake Stones ...**	**1/6**	**2/- each.**			
648	**Best Turkey Oil Stones ...**	**2/6**	**3/-**	**3/6**	**4/-**	**5/- each.**

Gouge Slips.



649

649	Washita	8d.	10d.	1/-	1/3 each.	
650	Arkansas	1/6	2/-	2/6	3/6	4/- each.
651	Canada... ...	4d. each.				
652	Charnley Forest	5d.	6d. each.			
653	Turkey ...	9d.	1/-	1/3 each.		

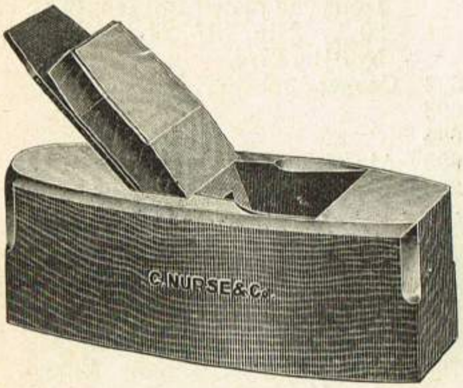
Hones.

654	Mounted Penknife Hones...	6d.	9d.	1/- each.		
655	Superior Razor Hones	1/-	1/6	2/-	2/6	3/6 each.

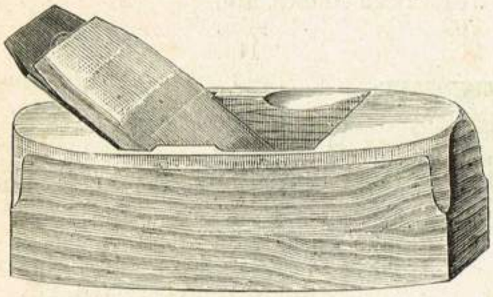
Planes—Best.

We have been Plane Manufacturers for over half-a-century, and our "Invicta" Brand is universally well known, and is a guarantee of very Best Materials and Workmanship. We hold a very large stock of well-seasoned Beechwood, and no pains will be spared to maintain and extend the reputation of these goods. Manufactured solely at our London Address: 173, 182, and 184, Walworth Road, London, S.E.

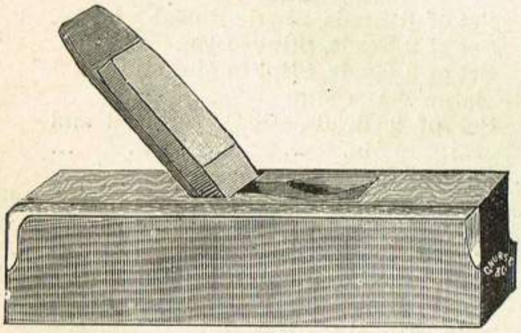
We pay the full London List Wages to our Workmen, which are very considerably higher than Country Manufacturers pay.



656 to 660



661



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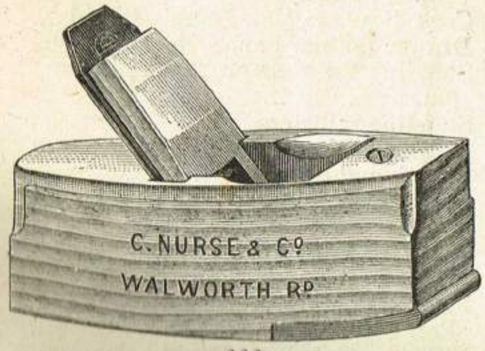
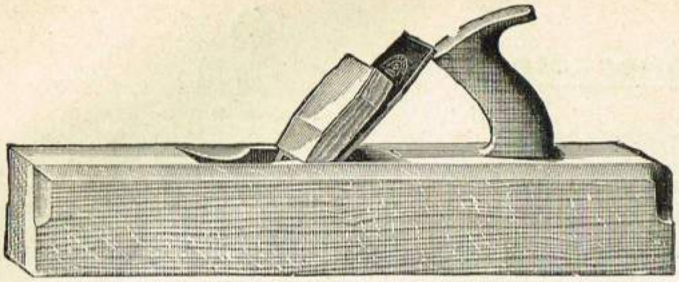


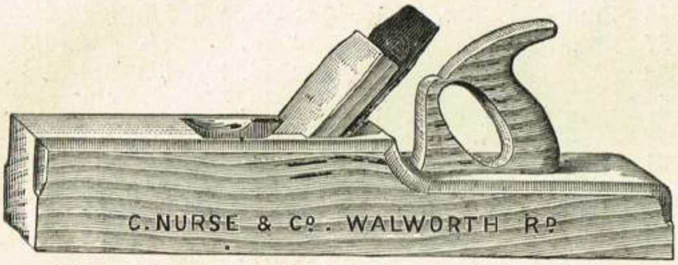
666

		C.S. Single Irons.	C.S. Parallel Single Irons.	C.S. Double Irons.	C.S. Parallel Double Irons.
656	Smooth Planes, $1\frac{1}{2}$, $1\frac{5}{8}$, $1\frac{3}{4}$ or 2in.	2/6	2/9	3/9	4/-
657	,, ,, $2\frac{1}{8}$in.	2/9	3/-	4/-	4/3
658	,, ,, $2\frac{1}{4}$in.	3/-	3/3	4/3	4/6
659	,, ,, $2\frac{3}{8}$in.			4/9	5/-
660	,, ,, $2\frac{1}{2}$in.			5/3	5/6
661	,, Box Maker's, Extra Low Pitch, Rounded both ends	3/-	3/3		
662	Mitre Shooting Planes $1\frac{1}{2}$, $1\frac{3}{4}$, or 2in.	2/6	2/9		
663	,, ,, $2\frac{1}{4}$in.	3/-	3/3		
664	Polished Boxwood Smooth Plane, fitted with all bright parallel irons, 2in.				8/-
665	ditto ditto $2\frac{1}{4}$in.				8/6
666	Improved Iron Fronted Smooths, $2\frac{1}{4}$in.				8/6
667	Smooths, fitted with Improved Iron Soles, $2\frac{1}{4}$in.				10/6
668	Compass Smooths, 2in.			4/3	4/6
669	,, with Boxwood Stop			6/6	6/9
670	,, with Best Screw Stop			8/-	8/3
671	Forkstaff or Hollow Smooth, 2in.	4/-	4/3	6/-	6/3
672	Round Faced Smooths 2in.	4/-	4/3	6/-	6/3
673	Toothing Planes 2in.	3/3	3/6		
674	,, ,, with 2 Irons	4/3	4/9		
675	Jack Planes, 12in. by $1\frac{3}{4}$in.	3/3	3/6	4/6	4/9
676	,, ,, 14in. by 2in.	3/6	3/9	4/9	5/-
677	,, ,, 17in. by $2\frac{1}{4}$in.	3/9	4/-	5/3	5/6
	Jack Planes with Sunk Handle, 1/ each extra.				
	,, ,, with Boxwood Striking Knobs, 3d. each extra.				
	,, ,, with Double or Closed Toats, 3d. each extra.				
	,, ,, with Round or Hollow Face, 3/6 each extra.				
678	Skew mouthed Badger, $2\frac{1}{4}$in.				8/6
679	,, ,, ,, Box Slipped				9/6
680	,, ,, ,, Shoulder Boxed				11/-
681	,, ,, ,, Dovetailed Boxed				13/6
682	Panel Planes, 15in. by $2\frac{1}{2}$in.			6/6	6/9
683	,, Slipped			7/-	7/3
684	Trying Planes, 22in. by $2\frac{1}{2}$in.			6/9	7/-
685	,, ,, 24in. by $2\frac{1}{2}$in.			7/-	7/3
686	,, ,, 26in. by $2\frac{5}{8}$in.			7/6	7/9
687	Jointer Planes, 28in. by $2\frac{3}{4}$in.			8/-	8/3
688	,, ,, 30in. by $2\frac{3}{4}$in.			8/6	8/9
	Try Planes with Sunk Handles, 1/- each extra.				
	,, ,, with Boxwood Striking Knobs, 3d. each Extra.				

Nurse's London-made Planes—*continued.*

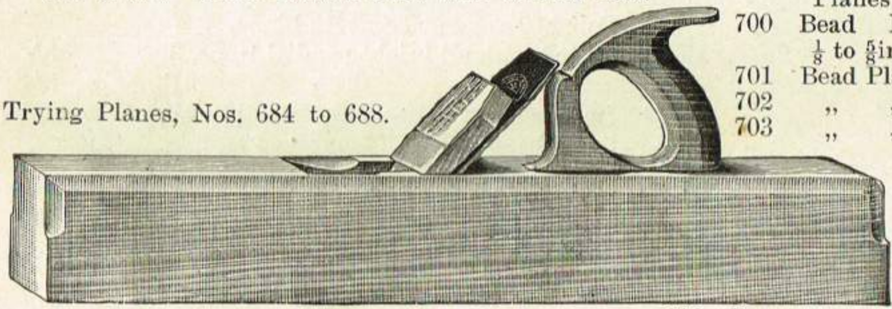


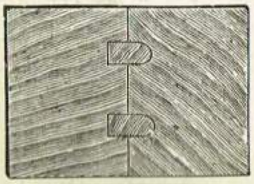
Jack Planes, Nos. 675 to 677.


C. NURSE & Cº. WALWORTH Rᴰ

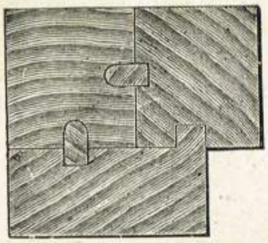
675 to 677 Sunk Handle Jack with Closed Toat.

Trying Planes, Nos. 684 to 688.

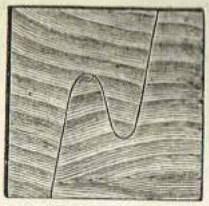




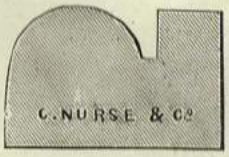
696 Set of 3 Double Air-Tight Planes.



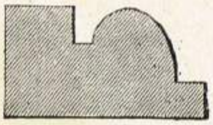
695 Set of 4 Single Air-Tight Planes.



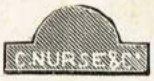
Hook Joint Plane. 697



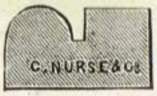
701 ¾in. Bead.



Torus Bead. 703T

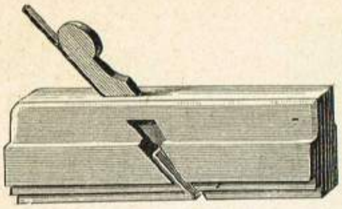


¾in. Astragal. 698

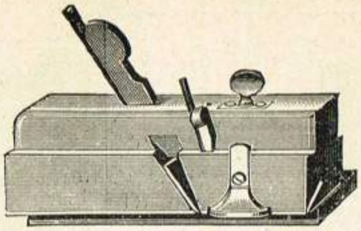


⅝in. Bead. 700

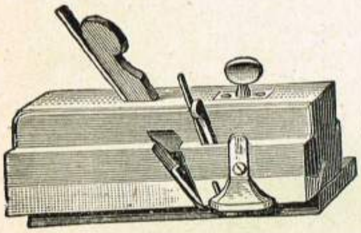
689	Picture Frame Makers' Mitre Planes with Scroll Wedges and Parallel Irons 20 by 2¾in. 8/6, 22 by 3in. 10/6, 24 by 3¼in. 12/6.	
690	Picture Frame Makers' Mitre Planes with Scroll Wedges and Parallel Irons and 6in. Plate on face at mouth only, 20 by 2¾in. 14/-, 22 by 3in. 16/-, 24 by 3¼in. 18/6.	
691	Picture Frame Makers' Mitre Planes with Scroll Wedges and Parallel Irons and plated full length of Plane, 20 by 2¾in. 21/-, 22 by 3in. 24/-, 24 by 3¼in. 27/6.	
692	Coopers' Jointers, 5ft.	17/6
693	,, ,, 5ft. 6in. ...	19/6
694	,, ,, 6ft.	22/6
695	Air Tight Planes, Set of 4 single	22/6
696	,, ,, Set of 3 double	27/6
697	,, Hook Joint Plane, Dovetailed Boxed	16/6
698	Astragals ¼ to ⅝in. 2/6, ¾in. 2/10, ⅞in. 3/-, 1in. 3/3.	
699	Astragal and Hollow Sash Planes and Templets, pair ...	8/6
700	Bead Planes, Single Boxed, ⅛ to ⅝in. ... ... each	3/-
701	Bead Planes, ¾in.	3/3
702	,, ,, ⅞in.	3/6
703	,, ,, 1in.	3/9
	Bead Planes if Double Boxed 1/- each extra.	
	Bead Planes, if Slipt, 4d. each extra.	
	Bead Planes if Skew Mouth, 2d. each extra.	
703T	Bead Plane Torus Slipt to ⅝in.... ...	4/-
703T	,, Torus Slipt, ¾in. 4/3, ⅞in. 4/6 1in.	4/9
703TT	,, Torus Slipt, if Double Boxed, 2/6 each extra.	
704	Set of 8 Beads, Single Boxed ⅛ to 1in.	25/6
705	Set of 9 Beads, Slipt to ½in.	29/6
706	Set of 9 Beads, Slipt to ½in. and the 3 large Torus Slipt	32/6
707	Set of 9 Beads, Double Boxed and Slipt to ½in.	35/6
708	Set of 9 Beads, Double Boxed and the 3 Large Torus Slipt	40/-
709	Set of 10 Beads, Double Boxed, Dovetailed, Skew Mouth, slipt to ½in. and the 3 large Torus Slipt	65/-
710	Centre Beads or Single Reeds, ¼in. 3/6 ⅜in. 4/-, ½in. 4/3, ⅝in. 4/6, ¾in. 4/9, ⅞in. 5/-, 1in. 5/6	
711	Cock Beads to ¼in., Double Boxed ...	3/9
712	Drawer Bottom Planes, ⅛, 3⁄16, or ¼in.	3/-
713	Standing Fillisters or Check Planes to ⅝in.	2/9
714	Standing Fillisters, ¾in...	3/-
715	Fillisters Moving, Boxed Edge with Tooth and Slip Stop	7/-
716	Fillisters Moving, Boxed Edge with Best Screw Stop	9/-
717	Fillisters Moving, Shoulder Boxed with Best Screw Stop	10/-
718	Fillisters Moving, Dovetail Boxed, Best Stop, 3 Slides to Fence	13/-
719	Fillisters Moving, Double Dovetail Boxed, Best Stop, 3 Slides to Fence	14/6



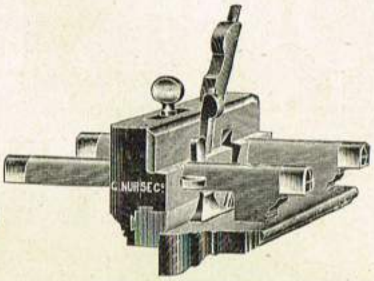
713 and 714 Standing Fillister.



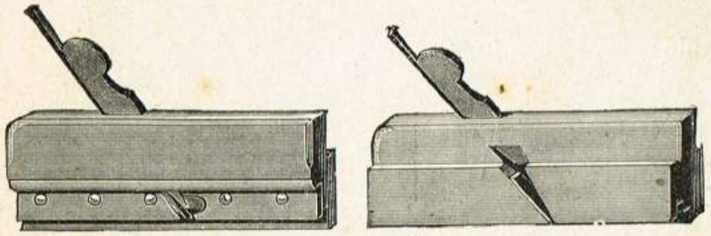
716 Best Moving Fillisters.



717 Best Moving Fillisters.

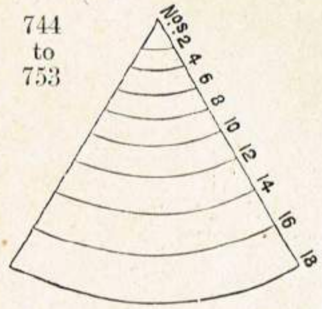


724 Sash Fillister.

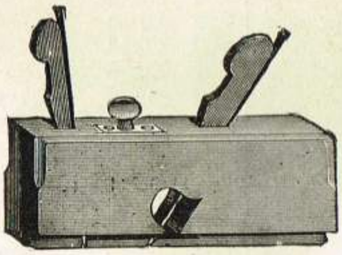


731 Match Planes.

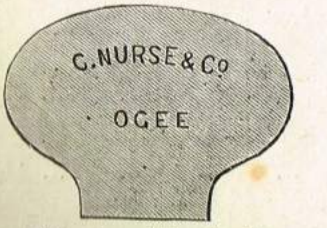
744
to
753



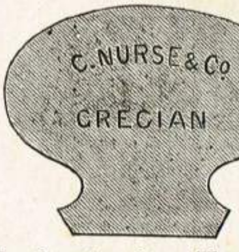
Sections of Hollows and Rounds.



730 Dado Groove.



736 Ogee Handrail.

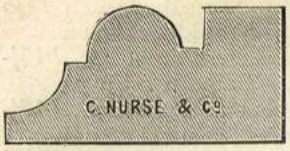


740 Grecian Ogee Handrail.

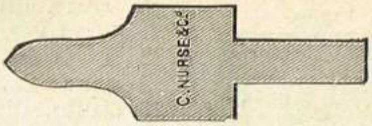
720	Fillisters, Sash, Plough Stop to throw Shavings on the Bench	11/6
721	Ditto, ditto, Shoulder Boxed and Ferruled both ends ...	15/-
722	Ditto, ditto, with tooth to throw the Shavings off the Bench...	18/-
723	Ditto, ditto, Single Dovetail Boxed	19/6
724	Ditto, ditto, Double Dovetail Boxed	21/-
725	Ditto, ditto, with Solid Boxwood Fence	23/6
726	Ditto, ditto, Solid Handle and Double Dovetailed	25/6
727	Ditto, ditto, Solid Handle with Solid Boxwood Fence ...	28/6
728	Ditto, ditto, Solid Handle Double Dovetail, Boxwood Screw Stems and Solid Boxwood Fence	35/-
729	Gothic Sash and Templets, per pair	8/6
730	Grooving Dado with Screw Stop $\frac{3}{8}$in. 7/-, $\frac{1}{2}$in. 7/-, $\frac{5}{8}$in. 7/-, $\frac{3}{4}$in. 7/6, $\frac{7}{8}$in. 7/6, 1in. 8/-.	
731	Ditto, Match $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, or $\frac{3}{4}$in. 6/6, $\frac{7}{8}$in. 7/-, 1in. 7/6 per pair.	
732	Ditto, Double-ended Match $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$in. 6/6, $\frac{7}{8}$in. 7/-, 1in. 7/6.	
733	Ditto, Moving Match with 3 prs. Irons to Work, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$in. 13/6 per pr.	
734	Ditto, Moving Match with 3 prs. Irons to Work, $\frac{3}{4}$, $\frac{7}{8}$, 1in. 13/6 per pr.	
735	Handled Flooring Raglet Plane	9/-
736	Hand Rail Planes Ogee 2in. made as Moulding Plane ...	6/6
737	Ditto, ditto, Set of 3	18/-
738	Ditto, made as Smooth Plane..	8/6
739	Ditto, ditto, Set of 3	24/6
740	Ditto, Grecian Ogee made as Moulding Plane	8/6
741	Ditto, ditto, ditto, set of 3 ...	24/6
742	Hand Rail Routers, circled both ways, Ogee	12/6
743	Ditto, ditto, Grecian Ogee, each	15/-
	Larger sizes than 2in. rise 4d. each $\frac{1}{8}$in.	
744	Hollows and Rounds, per pair to No. 12	4/10
745	Ditto, ditto, from 12 to 18 ...	5/-
746	Ditto, ditto, Joiner's set of 18 pairs	88/-
747	Ditto, ditto, half set of 9 pairs.	44/-
748	Ditto, ditto, Joiner's, with Snipe's Bills, Side Snipes, Side Rabbets, and Side Rounds, complete	114/-
749	Hollows and Rounds Skew Mouth, per pair to No. 12 ...	5/2
750	Ditto, ditto, Nos. 13 to 18 ...	5/4
751	Ditto, ditto, Joiner's set of 18 pairs	94/-
752	Ditto, ditto, half set of 9 pairs	47/-
753	Ditto, ditto, Joiner's complete set, with Snipe Bills, &c., &c., complete	120/-

WARRANTY.—Every Tool mentioned in this List (Oil Stones, Grind Stones, and Tools of Foreign manufacture excepted) is warranted to be of the Best Material, Workmanship, and Finish, and any faulty article will be exchanged if returned within one month from date of purchase.

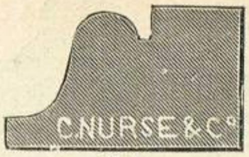
Nurse's London-made Planes—*continued.*



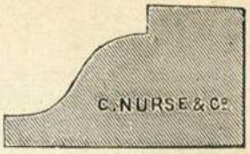
764
¾in. Neck Moulding.



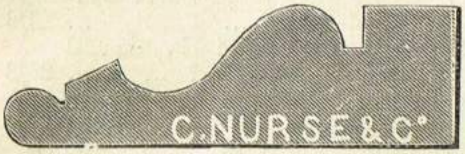
754 & 755
Lamb's Tongue Sash.



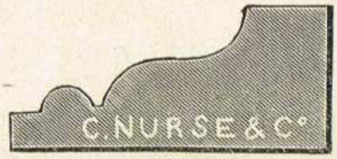
774
¾in. Quirk Ogee.



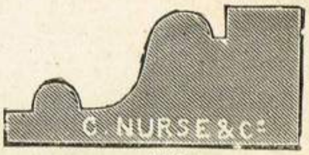
766
¾in. Ogee Moulding.



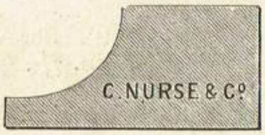
794
¾in. New Grecian Ogee and Quirk Bead.



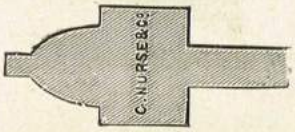
800
¾in. Back Ogee and Astragal.



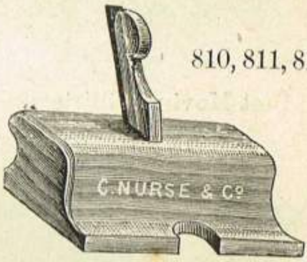
806
¾in. Quirk Ogee and Astragal.



856
Scotia Plane.



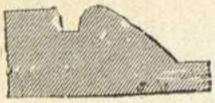
813
Ovolo Sash, 1½ by ⅝in.



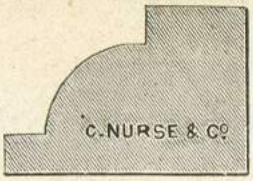
810, 811, 812

754	Lamb's Tongue Sash and Templets, per pair to ⅝, 1½, 1¾, or 2in.	8/6
755	Ditto ditto ¾in. by 2in. bar	10/-
756	Ditto ditto Scribing Planes, to ⅝in.	5/6
757	Ditto Shop Front Plane and Templet, ⅞in.	6/6
758	Ditto ditto 1 in.	7/-
759	Ditto ditto 1⅛in.	7/6
760	Ditto ditto 1¼in.	8/-
761	Ditto ditto 1⅜in.	8/6
762	Ditto ditto 1½in.	9/6
763	Neck Moulding Planes, boxed to ⅝in....	4/6
764	Ditto ditto ditto ¾in....	5/-
765	OG Planes, common, to ⅝in.	2/9
766	Ditto ditto ¾in.	3/3
767	Ditto ditto ⅞in.	3/6
768	Ditto ditto 1 in.	3/9
769	Ditto ditto 1⅛in.	5/6
770	Ditto ditto 1¼in.	6/6
771	Ditto ditto 1⅜in.	7/6
772	Ditto ditto 1½in.	8/6
773	Ditto Quirk ⅝in.	4/-
774	Ditto ditto ¾in.	4/6
775	Ditto ditto ⅞in.	5/-
776	Ditto ditto 1 in.	5/6
777	OG Quirk and Bead to ⅜in.	5/3
778	Ditto ditto ½in.	5/6
779	Ditto ditto ⅝in.	6/-
780	Ditto ditto ¾in.	6/6
781	Ditto ditto ⅞in.	7/-
782	Ditto ditto 1in.	7/6
783	OG Grecian, to ⅝in.	5/6
784	Ditto ¾in.	6/-
785	Ditto ⅞in.	6/6
786	Ditto 1in.	7/-
787	OG Grecian, new pattern, to ½in. ...	5/6
788	Ditto ditto ⅝in. ...	6/-
789	OG Grecian New Pattern to ¾in. ...	6/6
790	Ditto ditto ⅞in. ...	7/-
791	Ditto ditto 1in. ...	8/-
792	New Grecian OG and Quirk Bead, to ½in.	6/6
793	Ditto ditto ⅝in.	7/-
794	Ditto ditto ¾in.	7/6
795	Ditto ditto ⅞in.	8/-
796	Ditto ditto 1in.	8/6
797	Back Ogee and Astragal to ⅜in.... ...	4/6
798	Ditto ditto ½in.... ...	4/9
799	Ditto ditto ⅝in.... ..	5/3
800	Ditto ditto ¾in.... ...	6/-
801	Ditto ditto ⅞in.... ...	6/6
802	Ditto ditto 1in....	7/-
803	Quirk Ogee and Astragal, to ⅜in. ...	5/-
804	Ditto ditto ½in. ...	5/6
805	Ditto ditto ⅝in. ...	6/-
806	Ditto ditto ¾in. ...	6/6
807	Ditto ditto ⅞in. ...	7/-
808	Ditto ditto 1in. ...	7/6
809	Organ Builder's Grooving Plane ...	7/-
810	Old Woman's Tooth, with Iron	2/6
811	Ditto ditto small size, with Iron	2/-
812	Ditto ditto in Boxwood	2/- & 2/6
813	Ovolo Sash, per pair, and Templets, ⅝ 1½in.	7/-
814	Ditto ditto 1¾ by ⅝in. ...	7/6
815	Ditto ditto 2in. by ⅝in. ...	7/10
816	Ditto ditto ¾ by 2in.	9/-
817	Ditto ditto with Improved Brass End Templets, per pair, to ⅝ by 1½in.	11/-
818	Ditto ditto 1¾ by ⅝in. ...	11/6
819	Ditto ditto 2in. by ⅝in. ...	12/-
820	Ditto Scribing Planes for 1½ ditto or 1¾in.	3/9
821	Ditto ditto 2in. ..	4/-
822	Ovolo Sash Routers, in Iron	3/6

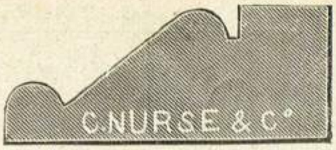
Nurse's London-made Planes—*continued.*



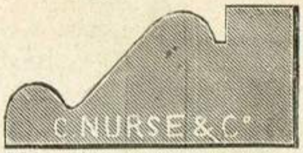
831 Quirk Ovolo.



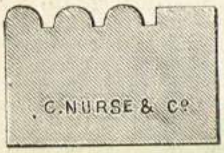
823 $\frac{3}{4}$in. Common Ovolo.



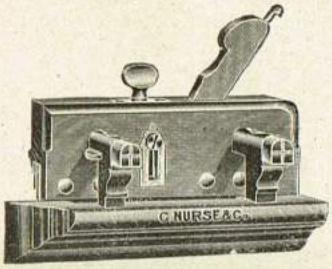
834 $\frac{3}{4}$in. Grecian Ovolo and Bead.



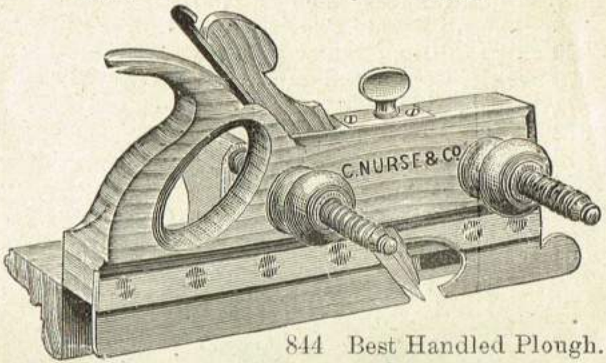
833 $\frac{3}{4}$in. Quirk Ovolo and Bead.



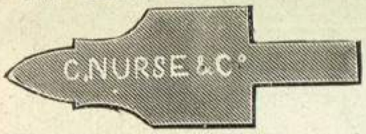
855 Three Reed.



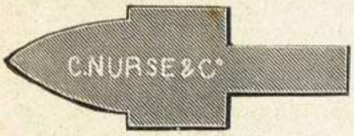
840 Best Plough.



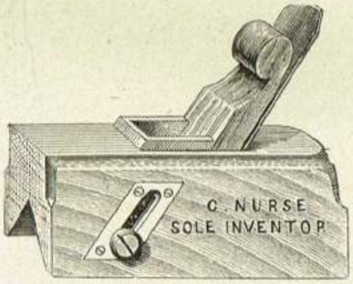
844 Best Handled Plough.



699 Astragal and Hollow Sash.



729 Gothic Sash.



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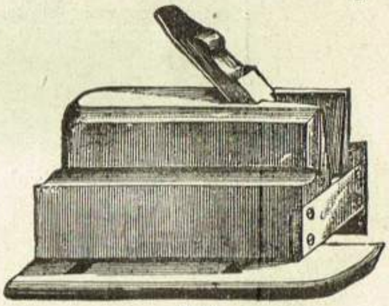


859

822A Ovolos, Common, to $\frac{5}{8}$in. 3/-
823 Ditto Ditto $\frac{3}{4}$in. 3/3
824 Ditto Ditto $\frac{7}{8}$in. 3/6
825 Ditto Ditto 1in. 4/-
826 Ditto Ditto $1\frac{1}{8}$in. 5/6
827 Ditto Ditto $1\frac{1}{4}$in. 6/6
828 Ditto Ditto $1\frac{3}{8}$in. 7/6
829 Ditto Ditto $1\frac{1}{2}$in. 8/6
830 Double Handed Wood Routers to work Common Ovolo Mouldings to $\frac{5}{8}$in. 10/-, $\frac{3}{4}$in. 11/-, $\frac{7}{8}$in. 12/-, 1in. 14/6, $1\frac{1}{8}$in. 17/-, $1\frac{1}{4}$in. 21/-
831 Quirk Ovolos to $\frac{5}{8}$ 4/-, $\frac{3}{4}$ 4/3, $\frac{7}{8}$ 4/6, 1in 5/-
832 Quirk Ovolo and Astragal, to $\frac{5}{8}$ 5/-, $\frac{3}{4}$ 5/6, $\frac{7}{8}$ 6/-, 1in. 6/6
833 Quirk Ovolo and Bead to $\frac{5}{8}$ 5/-, $\frac{3}{4}$ 5/6, $\frac{7}{8}$ 6/-, 1in. 6/6
834 Grecian Ovolo and Bead to $\frac{5}{8}$ 5/-, $\frac{3}{4}$ 5/6, $\frac{7}{8}$ 6/-, 1in. 6/6
835 Pianoforte Keymakers' Plane, Boxed ... 4/-
836 Ditto Ditto Iron Plate ... 4/6
837 Pipe Light or Curled Shaving Plane ... 4/6
838 Ploughs, Screw Stop, 8 Irons, unferruled 19/-
839 Ditto Best Screw Stop, 8 Irons, ferruled Stems 21/-
840 Ditto, Ditto, with Screw at side and best work 22/6
841 Ditto, Ditto, with long Skate End, Fore Plate 24/-
842 Ditto, Ditto, with Boxwood Screw Stems 30/-
843 Ditto, Ditto, with Best Solid Handle ... 28/6
844 Ditto, Ditto, with Boxwood Screw Stems, and with Boxwood Fence 37/6

Ploughs with Boxwood Fences, 2/6 each extra.
Handled Ploughs with Boxwood Fences, 3/6 extra.
845 Extra Fences for Ploughs or Fillisters, Beechwood 2/- each, Boxwood 4/6 each.
846 Rabbet Planes, Square Mouthed, to $1\frac{1}{4}$in., 2/8, $1\frac{1}{2}$in. 2/10.
847 Ditto, Skew Mouth, $\frac{1}{2}$ to $1\frac{1}{4}$in. 2/10, $1\frac{1}{2}$in. 3/-, $1\frac{3}{4}$in. 3/6, 2in. 3/9.
848 Ditto, ditto, Steel Faced to $1\frac{1}{2}$in., 6/- each.
849 Ditto, ditto, with Shoulder Boxed Edges to $1\frac{1}{2}$in., 6/- each.
850 Handled Circular Rabbet Planes, 11/- pair.
851 Side Rabbets, 5/9 per pair.
852 Side Rounds, 5/9 per pair.
853 Side Snipes, 7/- per pair. Ditto, Shoulder Boxed, 9/-
854 Snipe Bills, 6/- per pair. Ditto, Shoulder Boxed, 8/-
855 Reed Planes, 2 Reeds 5/-, 3 Reeds 6/- $\frac{1}{8}$, $\frac{3}{16}$, or $\frac{1}{4}$in.
856 Scotia Planes, $\frac{1}{2}$in. 3/6, $\frac{5}{8}$in. 3/6, $\frac{3}{4}$in. 3/9
857 Stair Nosing Planes, $\frac{3}{4}$in. 3/6, $\frac{7}{8}$in. 3/9, 1in. 4/-, $1\frac{1}{8}$in. 4/3, $1\frac{1}{4}$in. 4/6, $1\frac{3}{8}$in. 4/9, $1\frac{1}{2}$in. 5/-
858 Stop Chamfer Planes, C. Nurse's Original, 5/-
859 Ditto, ditto, E. Preston's Patent, 6/9
860 Table Planes with Gauge, $\frac{5}{8}$, $\frac{3}{4}$, or $\frac{7}{8}$in. 6/3 per pair.
861 Ditto, Rule Joint with Fence, $\frac{5}{8}$, $\frac{3}{4}$, or $\frac{7}{8}$in. 7/6 per pair.
862 Throating Planes, 5/6 each.
863 Centre V Planes to $\frac{1}{2}$in., 4/6
864 Ditto, ditto, with Moving Fence, 6/-

Planes made to Drawings or Patterns.

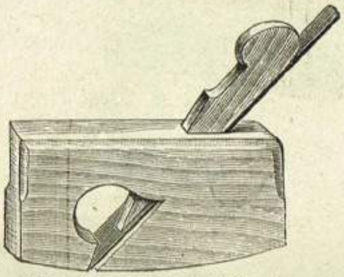
Nurse's London-made Planes—*continued.*

Beechwood Thumb Planes.

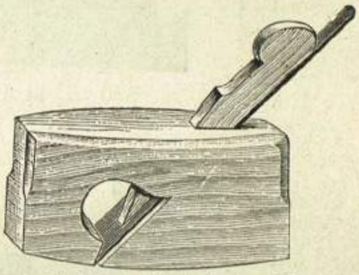
These Planes are 3½in. long.

			1	1⅛	1¼	1½in.	
865	Thumb Smooth Planes—Single Iron		2/6	2/6	2/9	3/-	each.
		½	⅝	¾	⅞	1in.	
866	Thumb Rebate Planes—Square Mouth	2/6	2/6	2/6	2/6	2/6	,,
867	Ditto, Compassed on Face, all sizes to 1in.					2/9	,,
868	Thumb Rebate Planes, circular on one side, right and left to 1in.					6/-	per pair.
869	Ditto ditto, circular both sides, to 1in.					3/3	each.
870	Ditto, Compassed on Face to 1in., and circular both sides					3/6	,,
871	Ditto, Side Rebate					5/6	per pair.
872	Thumb Hollow and Round Planes, Square Mouth to No. 12					4/6	,,
873	Thumb Side Round Planes					5/6	,,
874	Ditto ditto, Compassed on Face					6/-	,,

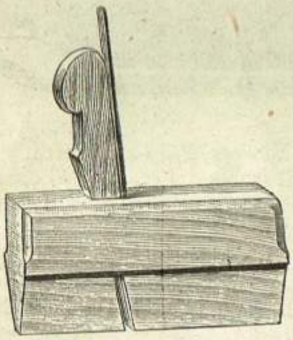
Above, if in Boxwood, 6d. each Plane extra.



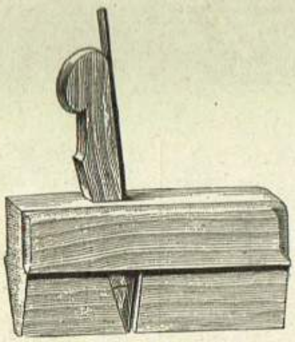
867 Compass Rabbet.



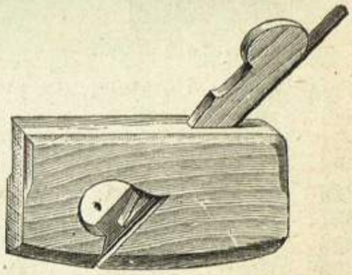
870 Compass Rabbet circled on sides and face.



871 Side Rabbet.



871 Side Rabbet.

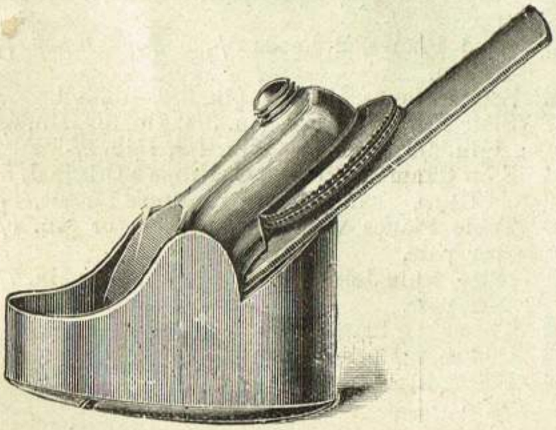


874 Compass Side Round.

Pattern Makers' Planes.

875 Pattern Makers' Thumb Planes, any length up to 6in., and with Irons from ¾in. up to 1¾in. wide, circled to any sweeps desired, 3/- each.

N.B.—Planes made to any kind of Drawing or Pattern.



New and Improved Gun-Metal Planes for Violin Making.

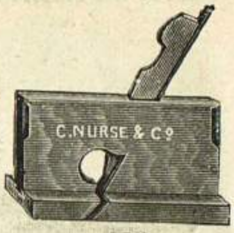
	Width of Irons	5/16in.	7/16in.	9/16in.	11/16in.	15/16in.
	Nos.	1	2	3	4	5
876	With Flat Face	3/-	3/6	4/-	4/9	5/6
877	With Round Face	3/3	3/9	4/6	5/3	6/-

1 Plain and 1 Toothed Iron is sent with each Plane.

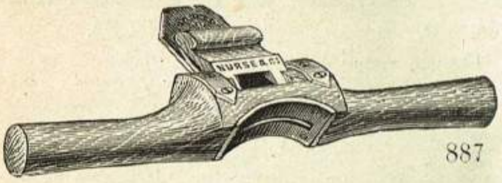
The illustration is full size of No. 4 Round Faced Plane.

Coachmakers'.

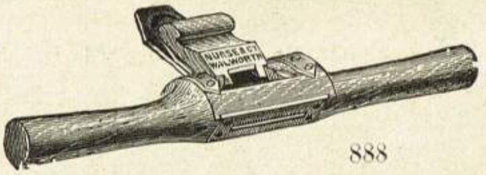
878 Smoothing Planes, 1⅝in. to 1¾in. ... 4/- each.
879 Compass ,, 1⅝in. or 1¾in. ... 4/6 ,, Ditto, Set of 6 ... 27/-
880 Concave ,, ,, ,, ... 4/6 ,, Ditto, Set of 3 ... 13/6
881 Coach Door Smooths, 1¾in. ... ... 4/6 ,,
882 Ditto, if Plated at Mouth ... ... 7/- ,,
883 Coach Door Jack, 2in., 5/6 ; 2¼in., 6/-
884 Ditto, if Plated at Mouth, 2in., 7/- ; 2¼in., 7/6
885 T Rabbet Planes, straight, 1½in., 1⅝in., or 1¾in., 3/9 ; 2in., 4/-
886 ,, ,, Compass, 1½in., 1⅝in., or 1¾in., 4/- ; 2in., 4/3



885

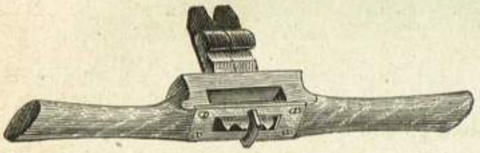


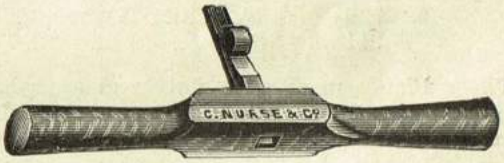
887



888

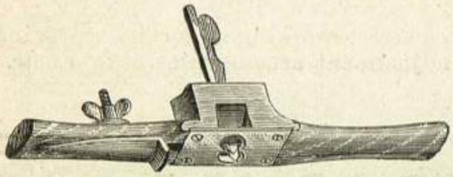
887 Jarvis Plane, Brass or Iron Face, with Brass Straps ... ... 11/6 each.
888 Nelson Plane, Iron Face with Brass Straps ... ... 10/6 ,,

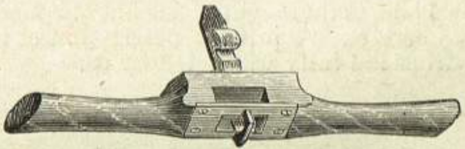

889 Beading Routers, with 1 pair of Irons.



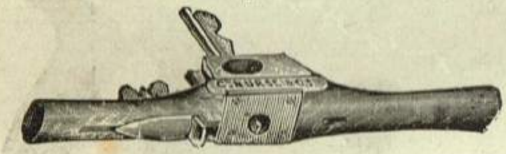
890

889 Beading Routers, with 1 pair of Irons, any size from ⅛in. to ⅝in., 7/6. Extra Irons for ditto, 1/3 per pair.
890 Boxing Routers, with Improved Eye Hole, including Iron, to ¾in., 4/3 ; ⅞in., 4/6 ; 1in., 4/9. Extra Irons for ditto, 9d. each up to ¾in. ; ditto, ⅞in. and 1in., 1/- each.

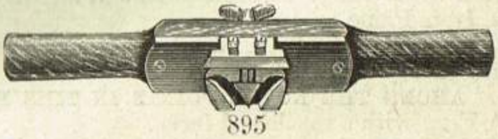

891 Improved Scratch Tool, with Sliding Fence.


892 Improved Square Tools or Routers.

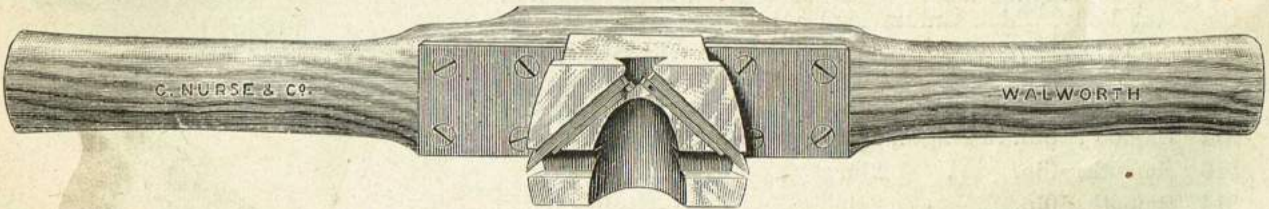
891 Improved Scratch Tool, with Sliding Fence ... ... 8/6 each.
892 Improved Square Tools or Routers ... ... 7/6 ,,
893 Improved Rounding Tools or Routers ... ... 7/6 ,,



894


895

894 Fence Grooving Routers, Plated, with Thumbscrew ... ... 15/6 per pair.
895 Jiggers or Side Routers... ... ... 12/- each.

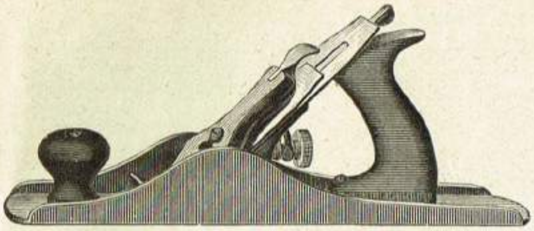


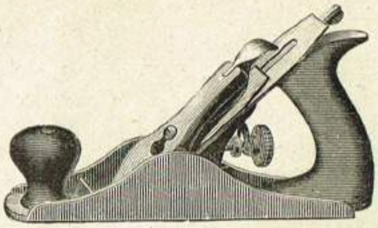
896

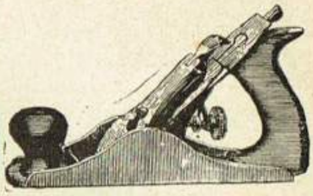
896 Williams' Pattern Improved Jiggers or Side Routers ... ... 12/- each.
897 Double Ended Coach Match Planes, ⅜in., ½in., ⅝in. or ¾in., 6/6 ; ⅞in., 7/- ; 1in., 7/6.
898 Coachmakers' Horizontal Steel Squares, Gun Metal Handles ... ... 4/6 each.
899 ,, T Bevels, 12in. Blades ... 2/6 each. Ditto, Brass Brushed... 3/- ,,
900 ,, Spider Mortise Bevels, with 3 Blades... ... ... 2/9 ,,
901 ,, Mortise Bevels ... ... 2/- ,,

Planes—American Iron, Stanley Co.'s Make.

Bailey's Patent Adjustable Planes, fitted with Stanley's Patent Lateral Adjustment. Over 2,000,000 already sold.


No. 6A


No. 4½A


No. 3A

902	No. 1A Smooth Plane,	5½in. in length,	1¼in. Cutter	...	...	5/-
903	„ 2A „	7 „	1⅝ „	...	...	6/-
904	„ 3A „	8 „	1¾ „	...	...	6/3
905	„ 4A „	9 „	2 „	...	...	7/-
906	„ 4½A „	10 „	2⅜ „	...	...	7/9
907	„ 5A Jack Plane	14 „	2 „	...	...	8/-
908	„ 5½A Panel Plane	14 „	2¼ „	...	...	9/-
909	„ 6A Fore „	18 „	2⅜ „	...	...	10/-
910	„ 7A Jointer Plane	22 „	2⅜ „	...	...	11/6
911	„ 8A „ „	24 „	2⅝ „	...	...	14/-

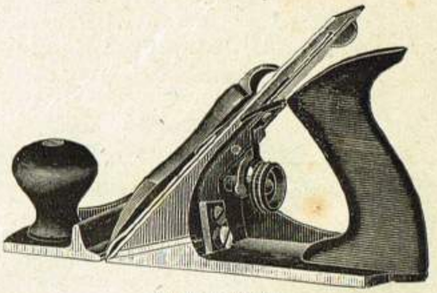
These Planes meet with universal approbation from the best Mechanics, as their extensive sale abundantly testifies. For beauty of style and finish they are unsurpassed, and the superior methods for adjusting them readily in all their parts render them economical to the owner.

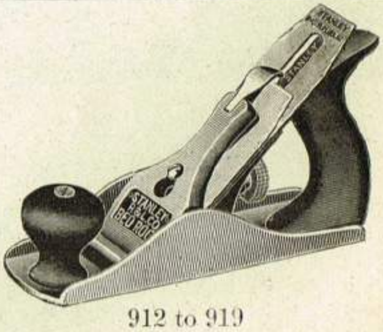
When the Plane-Iron is secured in its place, by using the brass Thumbscrew, the Lever is easily operated to drive or draw the Iron, and thus the thickness of shaving to be taken from any work may be regulated with perfect accuracy.

By means of the Lever located under the Plane-Iron, and working sidewise, the cutting edge can be easily brought into a position exactly square with the bottom of the Plane, if any variation should exist when the Plane-Iron is first clamped down.

Each Plane is thoroughly tested at our factory and put in perfect working order before being sent into the market. A printed description of the method of adjustment accompanies each Plane. The Plane-Irons are fully warranted by us.

Stanley Co.'s New Pattern "Bed Rock" Planes.


912 to 919



912 to 919

In the "Bed Rock" Plane, we have perfected a design which allows of the combination of the utmost solidity and rigidity, with a wider range of adjustments than heretofore placed on any Iron Plane.

The advantages of this design are made possible by the extreme nicety of their manufacture.

AMONG THE NOVEL POINTS IN THIS PLANE ARE:

A Frog with a machined face.

A Frog so designed that the entire bottom of the Frog rests solidly on a seat formed in the Plane Body.

A Frog so designed that its sides conform to Guides formed in the Plane Body, which Guides lend accuracy of adjustment to the Frog as well as prevent any possibility of its wobbling.

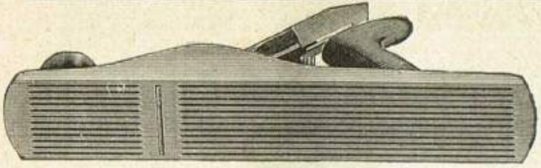
A reliable adjustment for width of Throat opening.

PRICES.

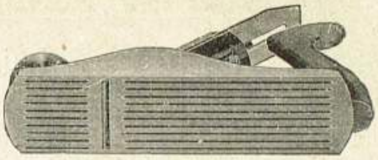
912	Smooth,	8in. in length,	1¾in. Cutter	...	...	8/-	each.
913	Smooth,	9in. „	2in. „	...	...	8/6	„
914	Smooth,	10in. „	2⅜in. „	...	...	10/-	„
915	Jack,	14in. „	2in. „	...	...	10/3	„
916	Jack,	15in. „	2¼in. „	...	...	11/6	„
917	Fore,	18in. „	2⅜in. „	...	...	12/6	„
918	Jointer,	22in. „	2⅜in. „	...	...	14/6	„
919	Jointer,	24in. „	2⅝in. „	...	...	16/6	„

Stanley Co.'s Planes—*continued.*

Bailey Patent Adjustable Planes with Corrugated Bottoms.



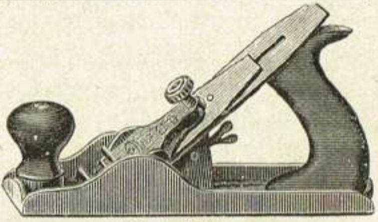
923 to 925



920 to 922

920	No. 3A.C. Smooth Plane,	8in.	in length,	1¾in.	Cutter	6/6
921	,, 4A.C.	,,	9in.	,,	2in.	,,	7/3
922	,, 4½A.C.	,,	10in.	,,	2⅜in.	,,	8/-
923	,, 5A.C. Jack Plane		14in.	,,	2in.	,,	8/3
924	,, 5½A.C. Panel Plane		14in.	,,	2¼in.	,,	9/-
925	,, 6A.C. Fore	,,	18in.	,,	2⅝in.	,,	10/6

Stanley's Adjustable Planes.

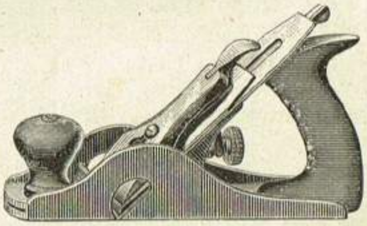


926 & 927

926 Smooth Plane 9in. in length by 2⅛in. Cutter—No. 104A ...6/-
927 Jack Plane 14in. in length by 2⅜in. Cutter—No. 105A ...7/6

Planes Nos. 104A and 105A have a Wrought Steel Stock and are adjusted by a lever. They are commended for their lightness and the ease with which they can be worked.

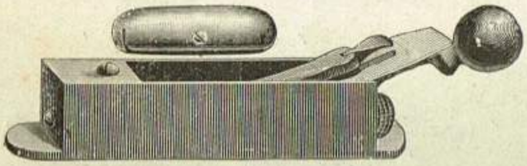
Carriage Makers' Rabbet Planes.



928 & 929

928 Carriage Makers' Rabbet Plane, 9in. by 2⅛in.—No. 10½A ... 8/6
929 Ditto ditto 13in. by 2⅛in.—No 10A ... 10/-

Bailey's Adjustable Cabinet Makers' Plane.



930

930 9A Cabinet Makers' Plane, 10in. in length, 2in. Cutter, 13/-; extra Cutters 10d. each.

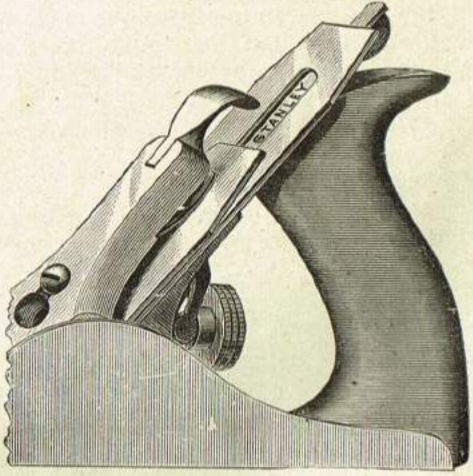
This Plane is used by Pianoforte Makers, Cabinet Makers and kindred trades, where an extra fine tool is required in finishing hard woods, etc.

A metallic Handle, with Slot and Set-screw, is furnished with each Plane. This handle can be attached to the top of the Plane, on either edge. The plane, turned on its side, will then work perfectly on a shooting-board for planing mitres, etc.

Stanley's Patent Lateral Adjustment.

This Sectional view of a Plane illustrates the new method of adjusting Plane-Iron, sidewise, to set the cutting edge exactly square with the face of the Plane. A Lever, located just under the Plane-Iron, enables the workman thus to regulate his cutter.

This Lever for sidewise adjustment, as illustration, is attached to all BAILEY'S IRON PLANES, Nos. 2A to 8A, and to Block Planes Nos. 15, 18, 19, 9½, 9¾, and 15½.

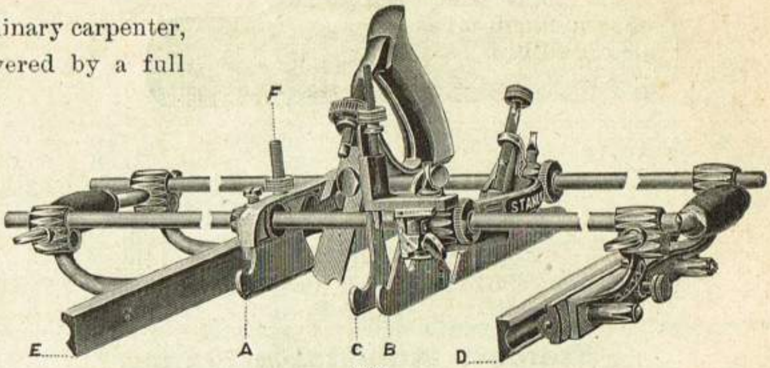


Stanley Patent Universal Plane, No. 55.

932 This Tool, in the hands of an ordinary carpenter, can be used on all lines of work covered by a full assortment of so-called Fancy Planes.

No. 55 Stanley Universal Plane, with 52 Tools, Bits, etc., 52/6.

The Plane is Nickel-plated; the 52 Cutters are arranged in four separate cases, and the entire outfit is packed in a neat wooden box.



932

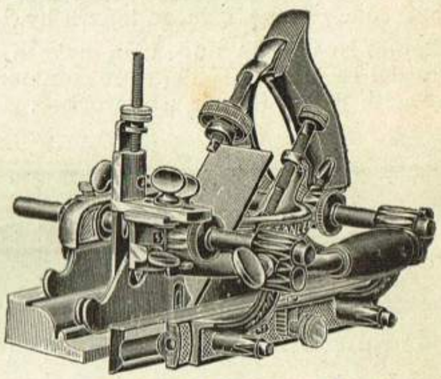
This Plane consists of:

A Main Stock (A) with two sets of transverse sliding arms, a depth gauge (F) adjusted by a screw, and a Slitting Cutter with stop.

A Sliding Section (B) with a patent vertically adjustable bottom.

The Auxiliary Centre Bottom (C) is to be placed in front of the cutter, as an extra support or stop when needed. This bottom is adjustable both vertically and laterally.

Fences (D) and (E). Fence D has a lateral adjustment by means of a screw, for extra fine work. The Fences can be used on either side of the Plane, and the rosewood guides can be tilted to any desired angle, up to 45°, by loosening the screws on the face. Fence E can be reversed for Centre Beading wide boards.



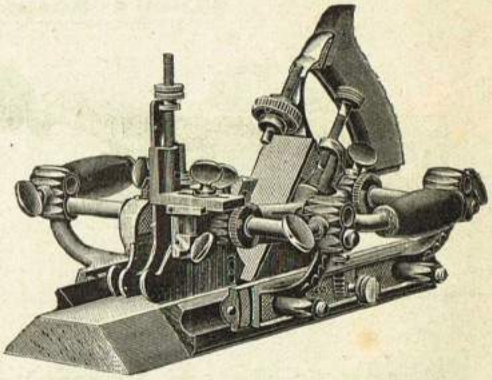
As Moulding Plane.

An Adjustable Stop to be used in beading the edges of matched boards is inserted on the left hand side of Sliding Section (B).

By means of the Patent Adjustable Bottom and the Auxiliary Centre Bottom it is possible to use a cutter of practically any shape with this Plane.

Each Plane is sold with the 52 Cutters marked ◇ in upper Plate on page 87.

Cutters shown in lower plate, page 87, are kept in stock and will be furnished to order. Cutters are shown one-half size. Style, sizes and prices are given on page 87.



As Chamfer.

DIRECTIONS.

Moulding Plane.—Insert a Cutter and adjust bottom of Sliding Section (B) to conform to the shape of the Cutter; then, by means of the two Check-nuts on the transverse arms, fasten this section firmly—**before tightening** the Thumb-screws which secure the sliding section to the arms.

When needed, adjust Auxiliary Centre Bottom (C) for an additional support in front of the Cutter. By tilting the rosewood guides on Fences D and E, mouldings of various angles may be formed.

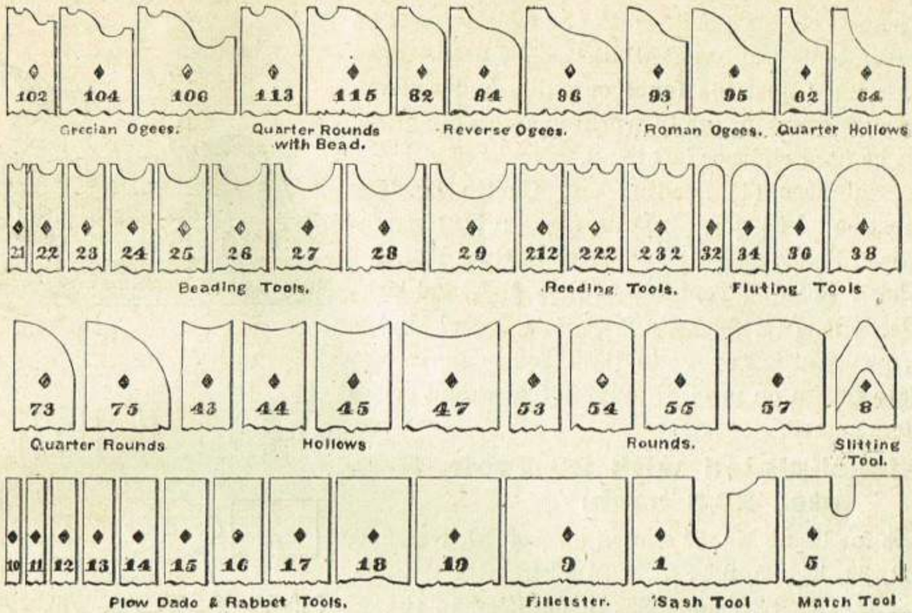
Match, Sash, Beading, Reeding, Fluting, Hollow, Round, Plow, Rabbet, and Filletster Plane.—Use in the same manner as for Mouldings. In working Match and Sash Cutters, the Auxiliary Centre Bottom (C) may be used as a stop.

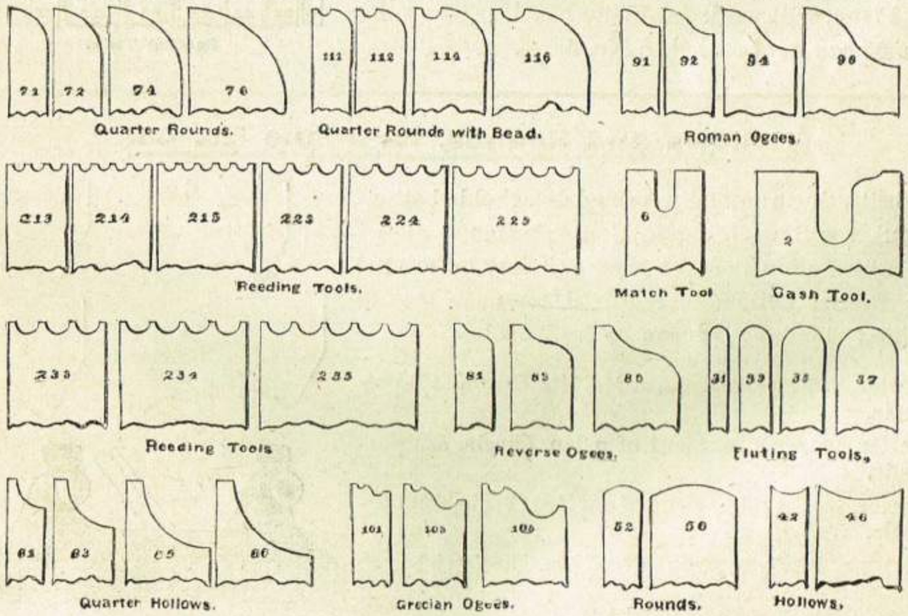
Dado.—Remove the Fences (D and E) and set the spurs parallel with the edges of Cutter. Insert long Adjustable Stop on left-hand side of Sliding Section.

Slitting Plane.—Insert the Cutter and Stop on right-hand side of Main Stock, and use Fence D or E for guide.

Chamfer.—Insert the desired Cutter; fasten a Fence on each side of the Plane, and tilt the rosewood guides to required angle. For Chamfer Beading, use in the same form as above, and feed the Cutter down gradually by use of thumb-nut for adjustment.

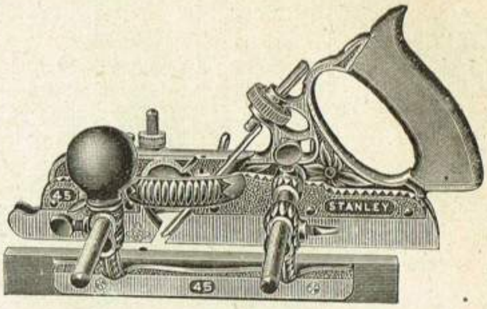
Cutters for Stanley Patent Universal Plane No. 55.





No.	Size	Style	Each	No.	Size	Style	Each	No.	Size	Style	Each	No.	Size	Style	Each
	in.				in.				in.				in.		
1	1½	Sash Tool	2/-	28	⅝	Bead Tool	1/3	62	½	Quarter Hollow	1/10	101	⅜	Grecian Ogee	1/10
2	1½	,, ,, ...	2/-	29	¾	,, ,, ...	1/3	63	⅝	,, ,, ...	1/10	102	½	,, ,, ...	1/10
5	¾	Match ,, ...	2/-	31	3/16	Fluting Tool	1/3	64	¾	,, ,, ...	2/-	103	⅝	,, ,, ...	1/10
6	3/16	,, ,, ...	2/-	32	¼	,, ,, ...	1/3	65	⅞	,, ,, ...	2/-	104	¾	,, ,, ...	2/-
8		Slitting Tool	1/3	33	5/16	,, ,, ...	1/3	66	1	,, ,, ...	2/-	105	⅞	,, ,, ...	2/-
9	1¼	Filletster	1/-	34	⅜	,, ,, ...	1/3	71	⅜	,, Round	1/10	106	1	,, ,, ...	2/-
10	⅛	Plow and Dado Tool	8d.	35	7/16	,, ,, ...	1/3	72	½	,, ,, ...	1/10	111	⅜	¼ Round with Bead..	1/10
11	3/16	,, ,, ,,	8d.	36	½	,, ,, ...	1/3	73	⅝	,, ,, ...	1/10	112	½	¼ ,, ,, ..	1/10
12	¼	,, ,, ,,	8d.	37	⅝	,, ,, ...	1/3	74	¾	,, ,, ...	2/-	113	⅝	¼ ,, ,, ..	1/10
13	5/16	,, ,, ,,	8d.	38	¾	,, ,, ...	1/3	75	⅞	,, ,, ...	2/-	114	¾	¼ ,, ,, ..	2/-
14	⅜	,, ,, ,	10d.	42	⅜	Hollow	10d.	76	1	,, ,, ...	2/-	115	⅞	¼ ,, ,, ..	2/-
15	7/16	,, ,, ,,	10d.	43	½	,, ...	10d.	81	⅜	Reverse Ogee	1/10	116	1	¼ ,, ,, ..	2/-
16	½	,, ,, ,,	10d.	44	⅝	,, ...	10d.	82	½	,, ,, ...	1/10	212	⅛	Reed Tool, 2 Beads..	10d
17	⅝	,, ,, ,,	10d.	45	¾	,, ...	10d.	83	⅝	,, ,, ...	1/10	213	⅛	,, ,, 3 ,, ..	1/3
18	¾	,, ,, ,,	10d.	45	⅞	,, ...	10d.	84	¾	,, ,, ...	2/-	214	⅛	,, ,, 4 ,, ..	1/8
19	⅞	,, ,, ,,	1/-	47	1	,, ...	10d.	85	⅞	,, ,, ...	2/-	215	⅛	,, ,, 5 ,, ..	2/-
21	⅛	Bead Tool	8d.	52	⅜	Round	10d.	86	1	,, ,, ...	2/-	222	3/16	,, ,, 2 ,, ..	10d.
22	3/16	,, ,, ...	8d.	53	½	,, ...	10d.	91	⅜	Roman ,, ...	1/10	223	3/16	,, ,, 3 ,, ..	1/3
23	¼	,, ,, ...	8d.	54	⅝	,, ...	10d.	92	½	,, ,, ...	1/10	224	3/16	,, ,, 4 ,, ..	1/8
24	5/16	,, ,, ...	10d.	55	¾	,, ...	10d.	93	⅝	,, ,, ...	1/10	225	3/16	,, ,, 5 ,, ..	2/-
25	⅜	,, ,, ...	10d.	56	⅞	,, ...	10d.	94	¾	,, ,, ...	2/-	232	¼	,, ,, 2 ,, ..	10d.
26	7/16	,, ,, ...	1/-	57	1	,, ...	10d.	95	⅞	,, ,, ...	2/-	233	¼	,, ,, 3 ,, ..	1/3
27	½	,, ,, ...	1/-	61	⅜	Quarter Hollow	1/10	96	1	,, ,, ...	2/-	234	¼	,, ,, 4 ,, ..	1/8
												235	¼	,, ,, 5 ,, ..	2/-

Stanley Adjustable Beading Rabbet and Matching Plane.



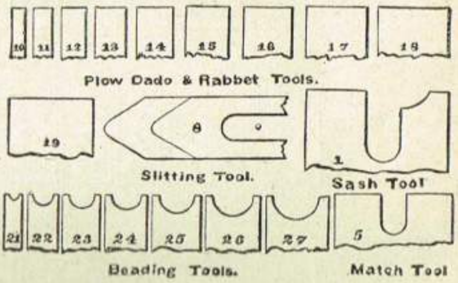
933

933 This Plane combines a main stock and a sliding section so arranged that cutters of different widths can be used. Each Plane is fitted with adjustable fence or guide and a depth gauge, and also with spurs for use in working across the grain. This Plane can be used right or left hand.

This Plane embraces (1) Beading and Centre Beading Plane, (2) Rabbet and Fillister, (3) Dado, (4) Plow, (5) Matching Plane, (6) Sash Plane, and (7) a superior Slitting Plane.

Each Plane has 7 Beading Tools ($\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, and $\frac{1}{2}$in.), 10 Plow and Dado Bits ($\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and $\frac{7}{8}$in.), a Slitting Blade, a Tonguing Tool and a Sash Tool.

These tools are shown on page 87, one-half size and prices for single Cutters named.



No. 45. Nickel-plated with 20 Tools, Bits, etc., 26/6 each.

Of the Cutters for Plane No. 55 shown on page 87, Nos. 2, 6, 9, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 212, 213, 214, 215, 222, 223, 224, 225, 232, 233, 234, and 235, in addition to the 20 sold with the Plane, will work in Plane No. 45. The other Cutters for No. 55 *can not* be used in No. 45.

Hollows and Rounds, for Plane No. 45.

933H By substituting a specially formed detachable bottom, as shown in cut, for the sliding section mentioned above, cutters known as "Hollows" and "Rounds" may be used to advantage. A special bottom is required for each size of these tools. The following sizes can be furnished—

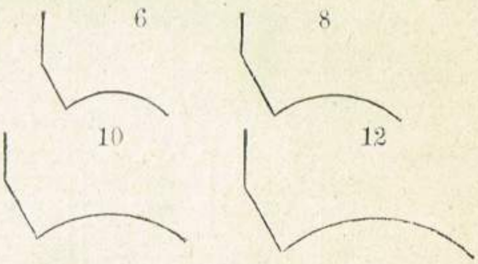
No. 6 $\frac{1}{2}$in. Cutter, works a segment of a $\frac{3}{4}$in. Circle, 4/9 per pair.

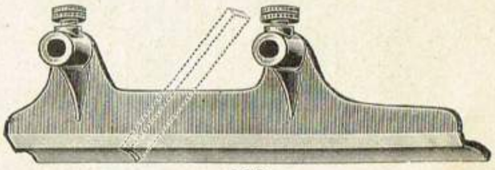
„ 8 $\frac{5}{8}$in. Cutter, works a segment of a 1in. Circle, 4/9 per pair.

„ 10 $\frac{3}{4}$in. Cutter, works a segment of a $1\frac{1}{4}$in. Circle, 4/9 per pair.

„ 12 1in. Cutter, works a segment of a $1\frac{1}{2}$in. Circle, 4/9 per pair.

Cutters for above, 8d. each.





933H

Nosing Tool, for Plane No. 45.

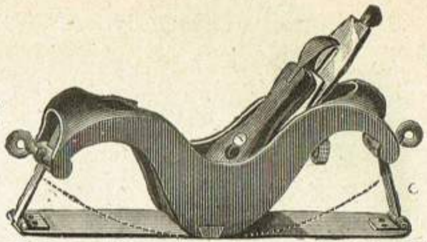
934 No. 5 Nosing Tool, $1\frac{1}{4}$in. (attach same as above) ... ... 3/6 each.

Cutters for above, 10d. each.

Reeding Tools, for Plane No. 45.

		2	3	4	5 Beads.
935	Size of Beads $\frac{1}{8}$in.	10d.	1/3	1/8	2/- each.
	Ditto $\frac{3}{16}$in.	10d.	1/3	1/8	2/- „
	Ditto $\frac{1}{4}$in.	10d.	1/3	1/8	2/- „

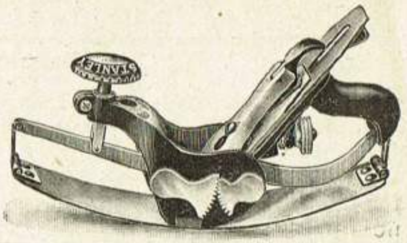
Adjustable Circular Plane.



936 This Plane has a Flexible Steel Face and, by means of the thumb screws at each end of the Stock, can be easily adapted to plane circular work—either concave or convex.

No. 13. Circular Plane, 1¾in. Cutter, 9/6 each.

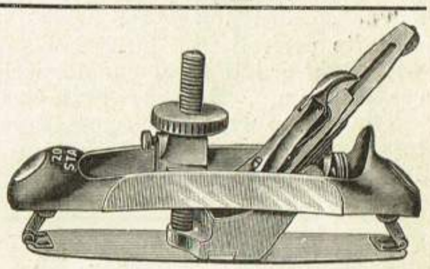
Stanley Adjustable Circular Plane.



937 In this improved form of Circular Plane the Flexible Steel Face can be easily shaped to any required Arc, either Concave or Convex, by turning the Knob on the Front of the Plane.

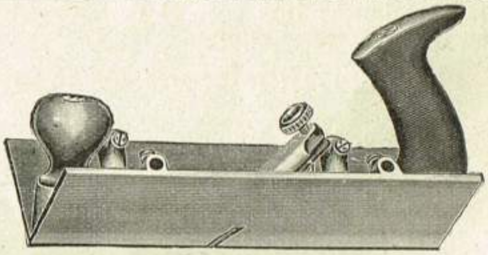
No. 113. Adjustable Circular Plane, 1¾in. Cutter, 9/3 each.

Victor Circular Plane.



938 A very superior tool, and all its parts are specially designed with the object of eliminating any lost motion due to wear. There are less parts subject to lost motion in this Plane than in any other Circular Plane. The ends of the flexible face being fixed and the force applied at the centre, great accuracy of adjustment is possible and the face is most firmly held in position. No. 20. Adjustable Circular Plane, Nickel-plated, 1¾in. Cutter, 12/6 each.

Core Box Plane.

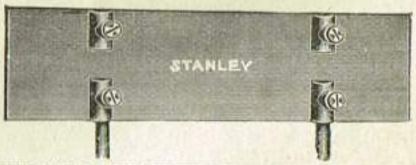


939 A Tool much needed by Pattern-makers, Wheelwrights, and others, for planing out semi-circles. This Plane is constructed so that the sides can be extended by additional sections, 2½in. wide, until a diameter of 10in. can be worked, if desired.

No. 57. Core Box Plane (with one pair of additional sections), for working semi-circles up to 5in. diameter ... 13/6 each.

Extra additional sections for working larger diameters, 3/6 per pair.

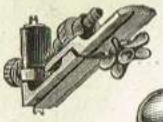
Cutters for above Plane ... ... 1/- each.



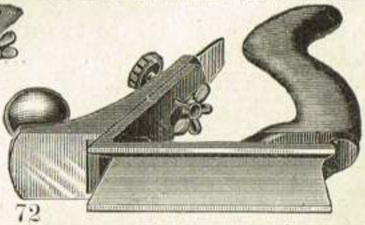
Adjustable Chamfer Plane.

The front section of this Plane is movable up and down. It can be firmly secured to the rear section at any desired point by means of a thumb-screw. Without the use of any other tool, this Plane will do perfect chamfer or stop-chamfer work of all ordinary widths.

For Beading, Reeding, or Moulding a chamfer, an additional section to to this Plane is furnished (price 3/-) with six cutters, sharpened at both ends, including a large variety of ornamental forms.



72½



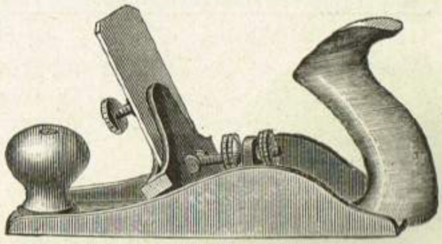
72

940 No. 72. Chamfer Plane, 9in. in length, 1⅝in. Cutter... 7/- each.

941 No. 72½. Chamfer Plane, with Beading and Moulding Attachment... ... ... 10/- each.

Cutters for above Planes, 8d. each.

Adjustable Scraper Plane.



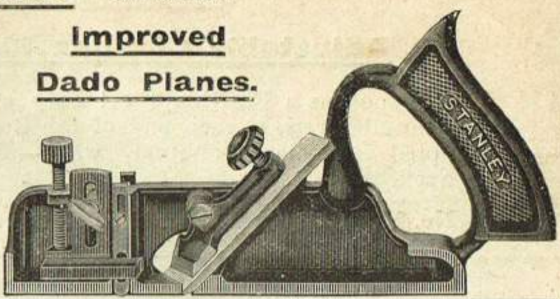
This Tool is used for scraping and finishing veneers or cabinet work. It can be used equally well as a Tooth Plane, and will do excellent work in scraping off old paint and glue.

With each Plane is furnished one Scraper Blade. Cutters for Toothing can be furnished, having either 22, 28, or 32 Teeth to the inch, at 1/- each.

942 Adjustable Scraper Plane, 9in. in Length, with 3in. Scraper Blade, 6/9 each. Extra Scraper Blades, 8d. each.

Stanley Co.'s Planes—*continued.*

Improved Dado Planes.



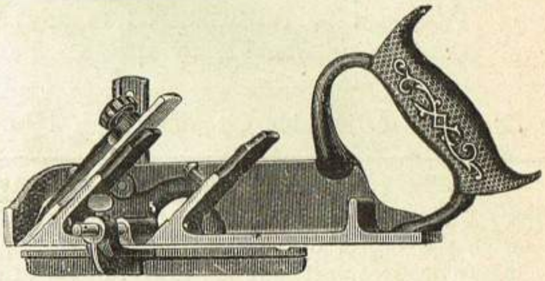
The Cutters of these Planes are on a Skew. Planes are fitted with a Depth Gauge, adjustable by a Thumb-screw. They are provided with two adjustable Spurs, which can be adjusted to take up wear as well as for depth of cut.

All widths are 8in. in length.

	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in. wide.
943	5/-	5/-	5/-	5/-	5/-	5/-	5/- each.

Extra Cutters, 8d. each.

Duplex Rabbet Plane and Fillister.



The valuable features of this Plane can be seen by a glance at the illustration given herewith.

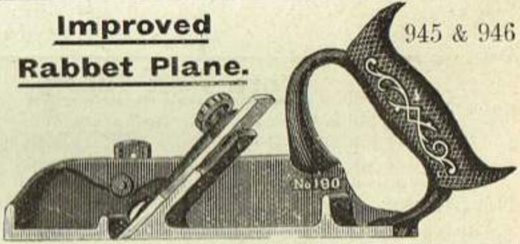
Remove the arm to which the fence is secured, and a Handled Rabbet Plane is had; and with two seats for the Cutter, so that the tool can be used as a Bull-nose Rabbet if required.

The construction of the stock is such that the Plane will lie perfectly flat on either side, and can be used with right or left hand equally well, while planing into corners, or up against perpendicular surfaces.

The arm to which the fence is secured can be screwed into either side of the stock, thus making a superior right or left-hand Fillister, with adjustable spur and depth gauge.

944 No. 78A. Iron Stock and Fence, $8\frac{1}{2}$in. in length, $1\frac{1}{2}$in. Cutter ... 5/- each. Extra Cutters, 8d. each.

Improved Rabbet Plane.



945 & 946

This Plane will lie perfectly flat on either side, and can be used with right or left hand equally well while planing into corners or up against perpendicular surfaces.

945 No. 190A. Iron Stock, 8in. in length, $1\frac{1}{2}$in. wide, with spur, 4/- each.

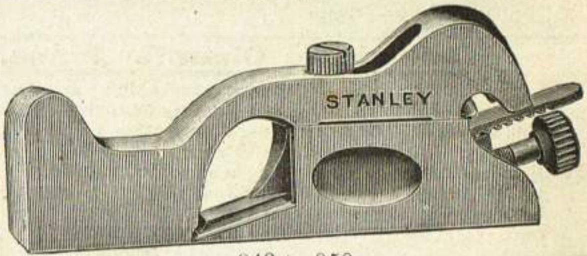
946 No. 191A. Iron Stock, 8in. in length, $1\frac{1}{4}$in. wide, with spur, 4/- each. Extra for Cutters, 8d. each.

Adjustable Cabinet Makers' Rabbet Plane.

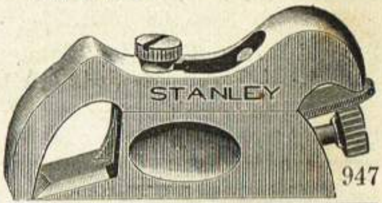
This plane is designed for fine Cabinet work where extreme accuracy is required. The sides and bottom being square with each other, the Plane will lie perfectly flat on either side, and can be used right or left.

Both the Cutter and width of throat opening are adjustable. The Plane is Nickel-plated and fitted with the "Handy" feature.

947 No. 90. Bull-nosed, 4in. in length, 1in. Cutter ... ... 6/9 each.
948 No. 92. Rabbet Plane, $5\frac{1}{2}$in. in length, $\frac{3}{4}$in. Cutter... 6/9 each.
949 No. 93. " " $6\frac{1}{2}$in. " 1in. " ... 8/- "
950 No. 94. " " $7\frac{1}{2}$in. " $1\frac{1}{4}$in. " ... 9/6 "
Cutters for above Planes ... ... 1/- each.

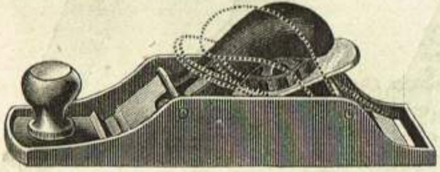


948 to 950



947

Double-ended Block Plane.

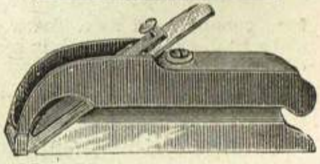


951 No. 130A. Block Plane (Double-ender), 8in. in length, $1\frac{3}{4}$in. Cutter, 2/- each.

This Plane has two slots and two cutter seats. By reversing the position of the cutter and the clamping wedge, it can be used close up into corners or other difficult places.

Cast Steel Cutters for above ... ... 5d. each.

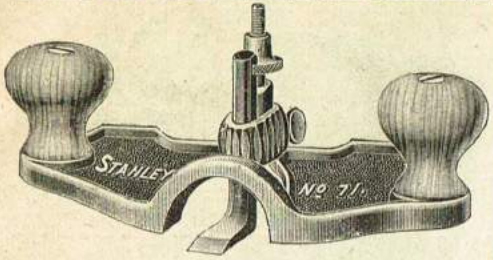
Stanley's Bull-nose Rabbet Plane.

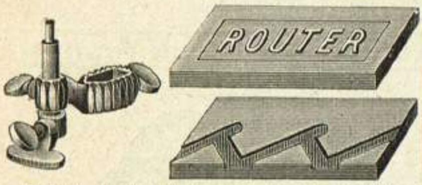


952 No. 75A Iron Stock, 4in. in length, 1in. Cutter, 1/2 each. Cutters for same, 4d. each.

Stanley Co.'s Planes—*continued.*

Woodworkers' Router Plane.

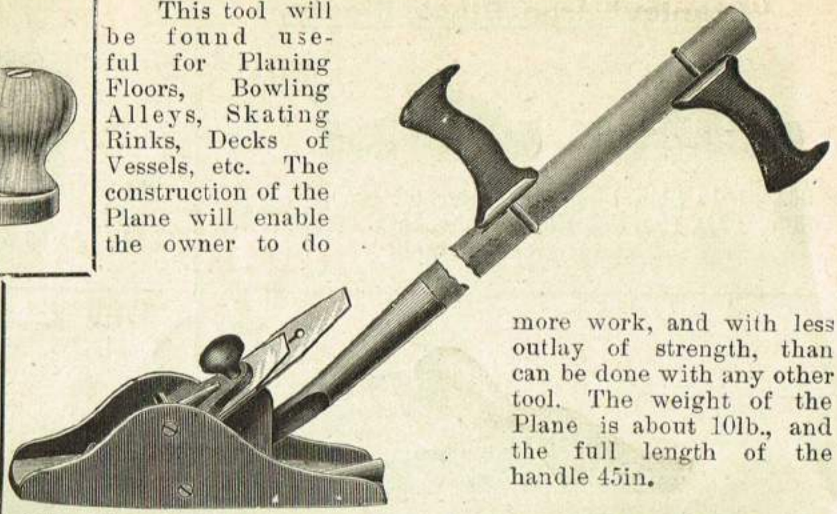




This Tool should be added to the kit of every skilled Carpenter, Cabinet Maker, Stair Builder, Pattern Maker, or Wheelwright. It is perfectly adapted to smooth the bottom of grooves, panels, or all depressions below the general surface of any woodwork. The Bits can also be clamped to the back side of the upright post, and outside of the stock. In this position they will plane into corners, will router out mortises for Sash-frame Pulleys, or will smooth surfaces not easily reached with any other tool. The attachment shown in small cut is furnished with each Plane. It can be substituted for the collar that holds the cutter when the work requires a Plane with a closed throat.

953 No. 71, Nickel-plated Stock, with Steel Bits (¼in. and ½in.) 6/3

Patent Floor Plane.

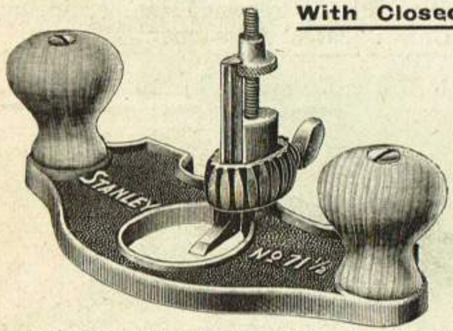


This tool will be found useful for Planing Floors, Bowling Alleys, Skating Rinks, Decks of Vessels, etc. The construction of the Plane will enable the owner to do more work, and with less outlay of strength, than can be done with any other tool. The weight of the Plane is about 10lb., and the full length of the handle 45in.

957 74A. Floor Plane, 10½in. in length, 2⅝in. Cutter, 15/6 each.

Cutters for same, 1/2 each.

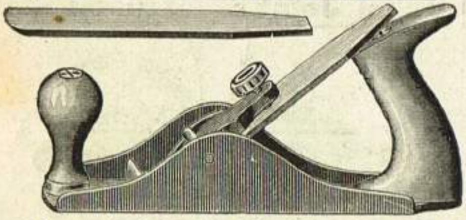
Woodworkers' Router Plane,
With Closed Throat.



954 No. 71½. Nickel-plated Stock, with Steel Bits (¼in. and ½in.) ... ... 5/- each

Cutters for above Planes (¼in. or ½in.), 1/- each.

Improved Scrub Plane.



This tool has a single Iron, with the cutting edge rounded; and is particularly adapted for roughing-down work before using a Jack or other Plane.

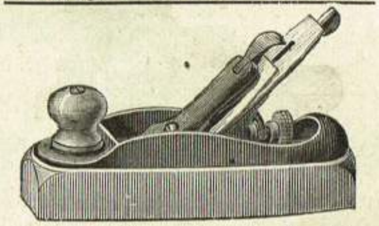
955 No. 40. Iron Stock, 9½in. in length, 1¼in. Cutter ... ... 3/6 each.

956 No. 40½. Iron Stock, 10½in. in length, 1½in. Cutter ... ... 4/6 „

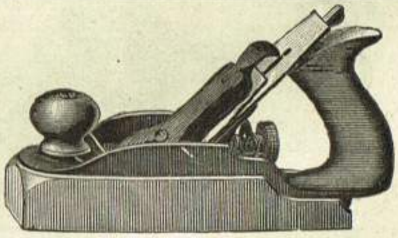
Cutters for above Planes, 1¼in. ... 8d. „

„ „ „ 1½in. ... 10d. „

Bailey's Wood Planes.



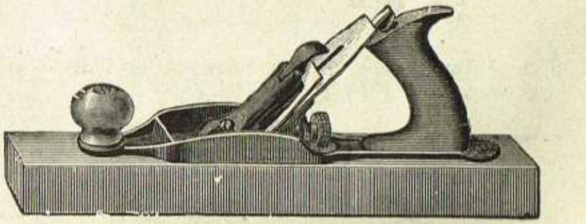
958 24A. Smooth Plane, 8in. in length, 2in. Cutter, ... 4/6 each.



959 & 960

959 35A. Smooth Plane, 9in. in length, 2in. Cutter, ... 5/6 each.

960 36A. Smooth Plane, 10in. in length, 2⅜in. Cutter ... ... 6/- „



961 to 963

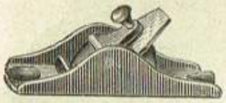
961 26A. Jack Plane, 15in. in length, 2in. Cutter ... ... 5/- each.

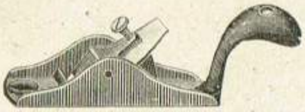
962 28A. Fore Plane, 18in. in length, 2⅜in. Cutter ... ... 6/- „

963 31A. Jointer Plane, 24in. in length, 2⅜in. Cutter ... ... 6/6 „

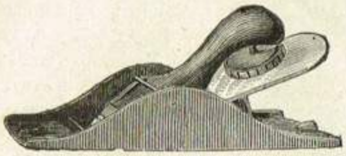
Stanley Co.'s Planes—*continued.*

"Stanley" Iron Block Planes.

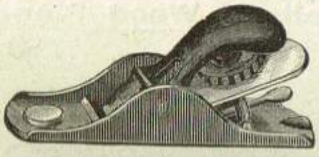




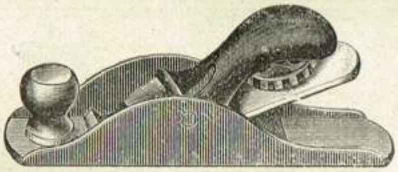
964 101A 3½in. long, 1in. cutter, 6d. each.
965 100A Handled Block Plane, 3½in. by 1in., 8d.
Extra Cutters, 2d. each.



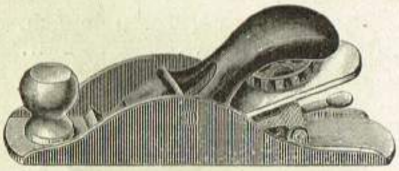
966 162A Block Plane, 5½in. long, 1¼in. Cutter, 1/-



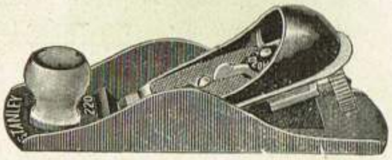
967 103A Block Plane, Adjustable, 5½in. long, 1¼in. Cutter, 1/6 each.
Extra Cutters for above Block Planes, 4d. each.



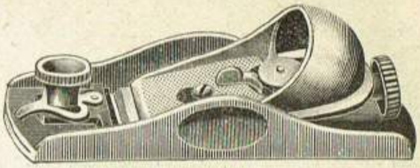
968 110A Block Plane, 7½in. long, 1¾in. Cutter, 1/6



969 120A Block Plane, adjustable, 7½in. long, 1¾in. Cutter, 2/- each.



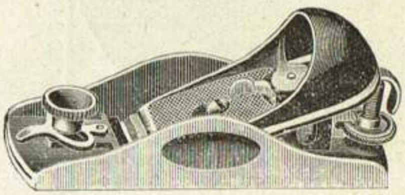
970 220A Block Plane, adjustable, 7½in. long, 1¾in. Cutter, 2/- each.



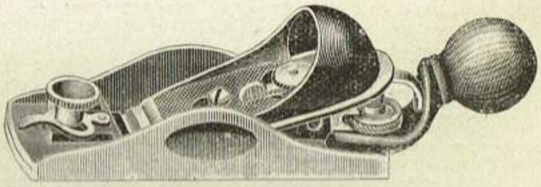
971 60A Low-Angle, Block, 6in. long, 1½in. Cutter, 3/9 each.
972 65A Low-Angle, Block, 7in. long, 1¾in. Cutter, 4/- each.

Bailey's Adjustable Block Planes.

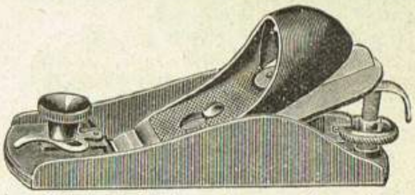
WITH IMPROVED THROAT ADJUSTMENT.



973 9½A Block Plane, 6in. long, 1¾in. Cutter, 3/3
974 15A Block Plane, 7in. long, 1¾in. Cutter, 3/6

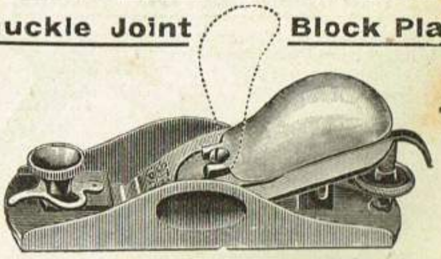


975 9¾A Block Plane, Rosewood Handle, 6in. long, 1¾in. Cutter, Lateral Adjustment, 3/9 each.
976 15½A Block Plane, Rosewood Handle, 7in. long, 1¾in. Cutter, Lateral Adjustment, 4/- each.



977 16A Nickel Trimmings, 6in. long, 1¾in. Cutter, 3/9 each.
978 17A Nickel Trimmings, 7in. long, 1¾in. Cutter, 4/- each.

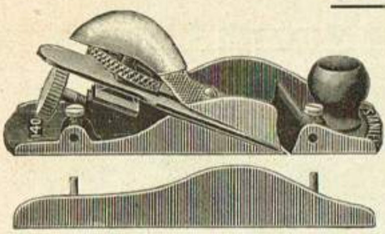
Knuckle Joint Block Planes.



The Knuckle Joint in the cap makes it a lever, too; and placing the cap in position, will also clamp the cutter securely in its seat.

979 18A Nickel Trimmings, 6in. long, 1¾in. Cutter, 3/9 each.
980 19A Nickel Trimmings, 7in. long, 1¾in. Cutter, 4/2 each.

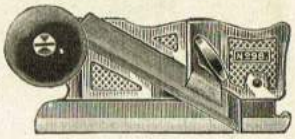
Stanley Co.'s Planes—*continued.*



Skew Mouthed Rabbet Plane.

981 Skew Mouthed Rabbet and Block Plane. A detachable side easily changes this tool from a Block Plane to a Skew Rabbet Plane, or *vice versa*. Price 4/- each.

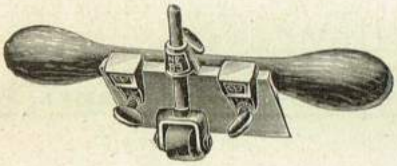
Side Rabbet Plane.



982 A convenient Tool for side-rabbetting and trimming dados, mouldings, and grooves of all sorts. A reversible nose-piece will give the tool a form by which it will work close up into corners when required. Length, 4in.

No. 98. Right Hand, 3/-	No. 99. Left Hand, 3/- each.

Improved Wood Scraper.



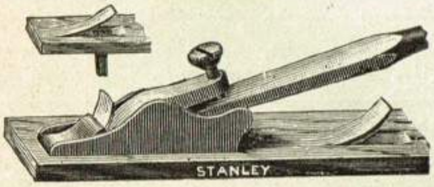
983 This Scraper can be adjusted to any desired pitch, and may be worked toward or from the person using it. The Roller acts as a support to relieve the strain on the wrist and hands of the workman. The handle can be detached for working into corners.

No. 83A. Wood Scraper, with Handles and Roller, 3in. blade. Price 3/3 each. Extra Cutters for same, 8d. each.

Stanley's New Pattern Wood Scraper.

984 No. 80. The Blade of this Scraper may be sprung to a slight curve by the thumbscrew shown in the centre of the cut, which will be found a great advantage in working with this tool.

Price 3/6 each. Extra Cutters for same, 8d. each.



Stanley's Adjustable Chisel Gauge.

985 Attach to a ¼in. Chisel with bevel-edge up, and a shaving of any desired thickness can be raised. Very useful for blind-nailing, or for laying wood strips in ornamental surface work.

Price 9d. each.

The New Adjustable Jointer Gauge.

986 We claim for this Tool :

1st.—The ease with which it is attached to any Plane, Jack or Try.

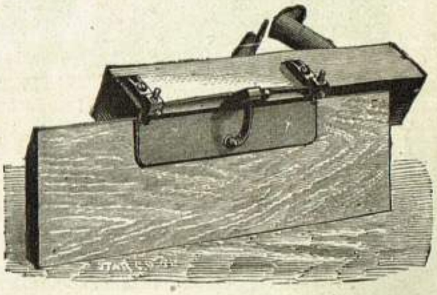
2nd.—The great amount of time saved, without the use of Bevel or Try Square.

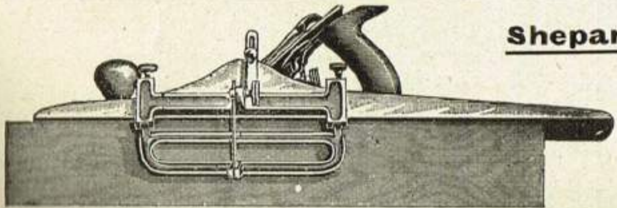
3rd.—It is adjustable for Squaring, or to any Bevel desired.

4th.—The work completed in the highest stage of perfection, even by inexperienced workmen.

Price 6/6 each.

Attach the Gauge to the Plane, so that the depression in the centre of the wing of the Gauge shall be directly opposite the cutting edge of the Plane Iron.





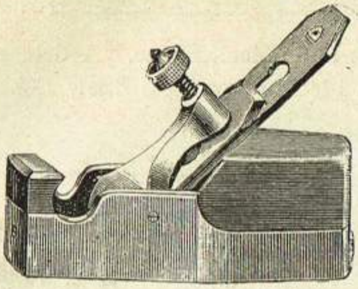
Shepardson's Improved Jointer Gauge for Iron Planes.

987 This is attached to an Iron Plane as easily as the previous one is to a Wooden Plane.

Price 6/6 each.

Best London-made Steel, Iron, and Gun Metal Planes.

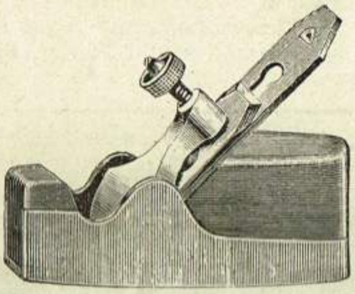
Smooth Planes.



988 & 989

988 Best Malleable Iron, 2¼in. ... 18/- each.
989 Best Gun Metal ditto, 2¼in., Steel Face, and fitted in Ebony ... 23/6 „

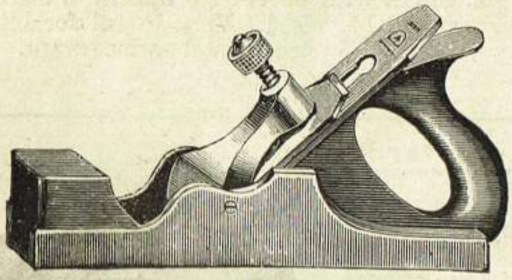
Steel Smooth Planes.



990

990 Improved Steel Smooth Plane, 2¼in., fitted in Rosewood ... ... 19/6 each.

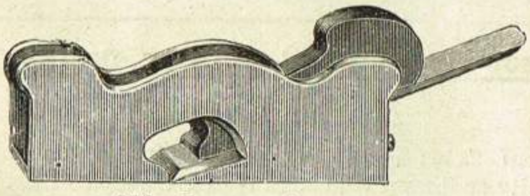
Iron Panel Planes.



991 & 992

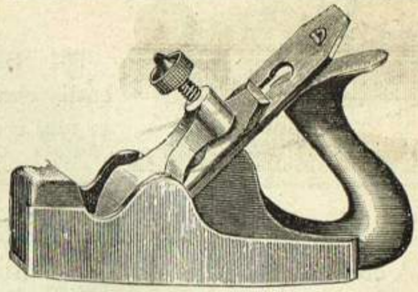
991 9in. long, with 2¼in. Irons, Rosewood mounted ... ... 18/6 each.
992 12½in. long, with 2½in.Irons, Rosewood mounted ... ... 27/- „

Steel Shoulder Planes.



993 Rosewood mounted.
8in. by 1¼in., 16/- 8in. by 1½in., 17/-

Handled Smooth Planes.

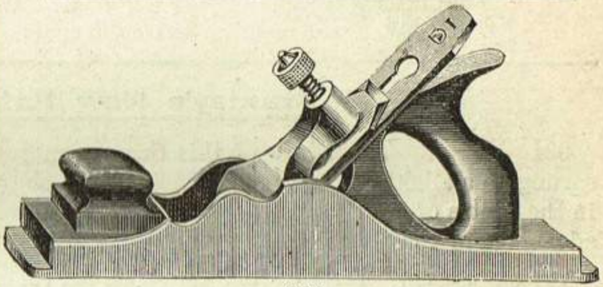


994 & 995

994 Improved Handled Steel Smooth Plane, 2¼in. ... ... 21/6 each.
995 Gun Metal ditto, with Steel Face 24/6 „

Either of these Planes, if made with closed Rosewood Handle, 1/6 extra.

Steel Panel and Jointer Planes.

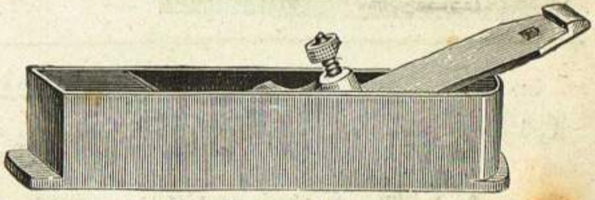


996

996 Rosewood mounted, with 2½in. Irons.

Length	14½in.	17½in.	21½in.	25½in.
	31/-	34/-	36/6	40/6

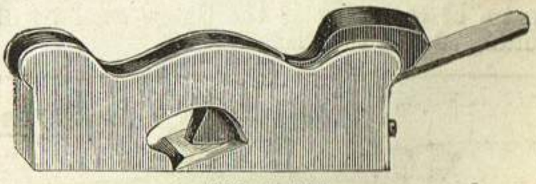
Steel Mitre Planes.



997 Rosewood mounted.

8½in. by 2in., 16/6 each. 10½in. by 2¼in., 17/6 each.
If with Skew Mouth, 1/6 extra.

Iron and Gun Metal Shoulder Planes.

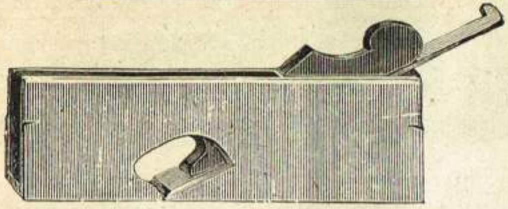


998 & 999

998 Best Malleable Iron, 1¼in, 15/-; 1½in., 16/-
999 Gun Metal, Steel Faced, Ebony mounted, 1¼in., 21/-; 1½in., 22/-

Best London-made Metal Planes—*continued.*

Steel Rabbet Planes.

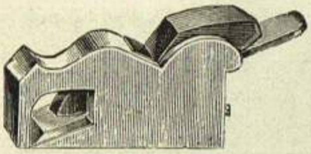


1000

6in. by ½in.	8in. by ¾in.	9in. by 1in.	9in. by 1½in.
9/6	10/6	12/-	14/- each.

If made with Skew Mouth, 1/- extra.

Bull-nose Planes.

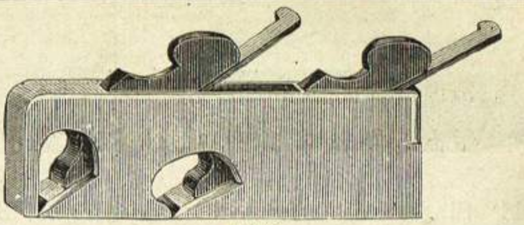


1001 & 1002

1001 Best Malleable, Rose Mounted, 1⅛in., 7/6; 1¼in., 8/- each.

1002 Gun Metal, Steel-faced, Ebony Mounted, 1⅛in., 10/6; 1¼in., 11/- each.

Steel Rabbet Planes with Two Irons.

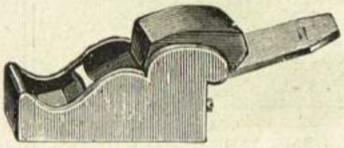


1003

8in. by ¾in.	9in. by 1in.	9in. by 1¼in.	9in. by 1½in.
15/6	16/6	17/6	18/6

If made with Skew Mouth, 2/- extra.

Chariot Planes.



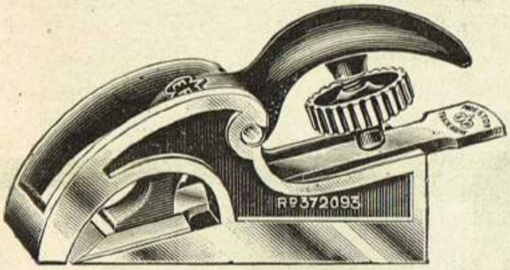
1004 & 1005

1004 1¼in. Malleable, Rose Mounted, 7/6 each.

1005 1¼in. Gun Metal, Ebony Mounted, 11/- each.

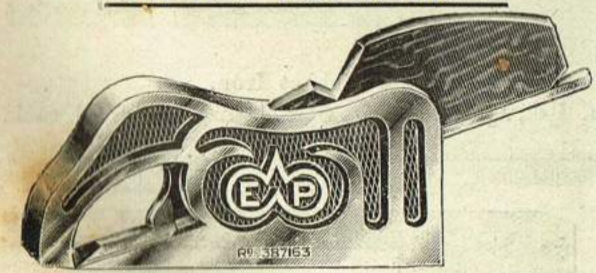
New Patterns English-made Metal Planes.

Registered Bull-nose Plane.



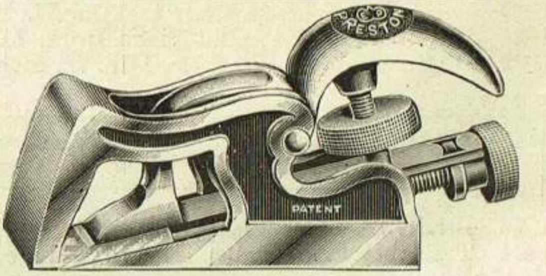
1006 Japanned, with Bright Parts, 1⅛in., 3/9 each.

Bull-nose Rabbit Plane.



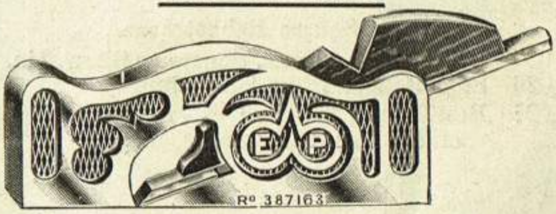
1008 Nickel-plated, with Rosewood Wedge. 3in. by ⅝in., 3/- each.

Adjustable Bull-nose Plane.



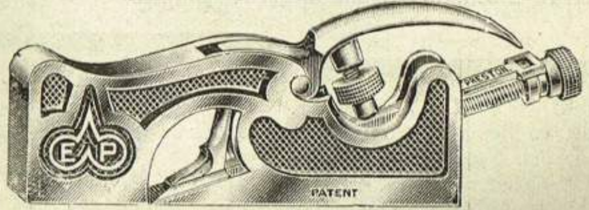
1007 Nickel-plated, 1⅛in. Iron, 6/- each.

Rabbit Plane.



1009 Nickel-plated, with Rosewood Wedge. 5in. by ⅝in., 6/- each.

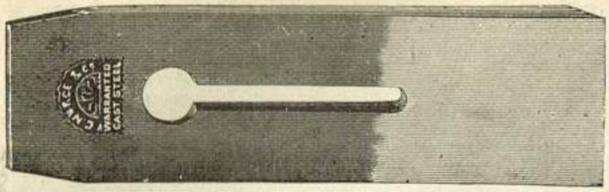
Adjustable Rabbet Plane.

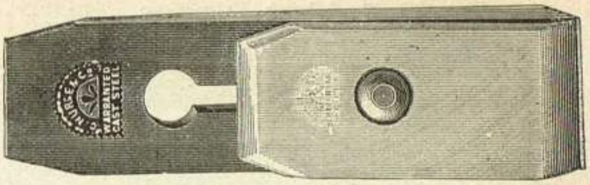


The Iron of this Plane is easily adjusted by means of the milled nut; it is fastened by a tightening screw underneath the lever, thus giving a smooth surface for the palm of the hand.

1010 The Plane is nicely Nickel-plated, is 5in. in length, with ⅝in cutter, price 7s. each.

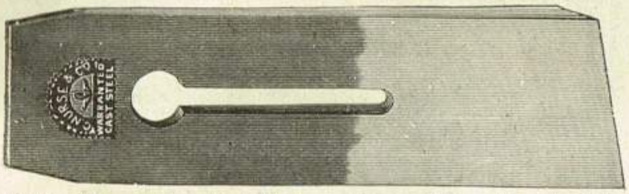
Plane Irons.

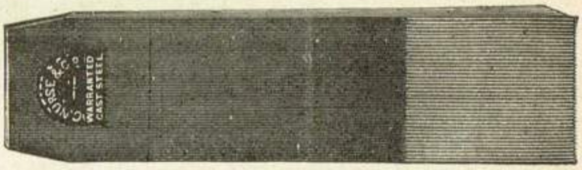




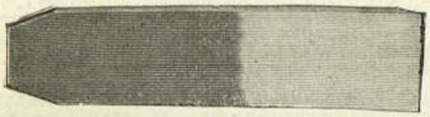
		1½	1¾	2	2⅛	2¼	2⅜	2½	2⅝	2¾	3in.	
1011	Single Cut Irons	7d.	7½d.	8d.	8½d.	9½d.	10½d.	11d.	1/2	1/3	1/6	each.
1012	Double Irons	1/1	1/2	1/3	1/4	1/5	1/7	1/8	1/10	2/-	2/6	,,
1013	Single Cut Parallel......	9d.	9½d.	10d.	10½d.	1/-	1/1	1/2	1/3	1/5	1/9	,,
1014	Double Parallel	1/3	1/4	1/5	1/6	1/7	1/10	1/11	2/-	2/3	2/9	,,
1015	Ditto, Bright all over for Iron Planes			1/9	1/10	2/-	2/2	2/4 each.				

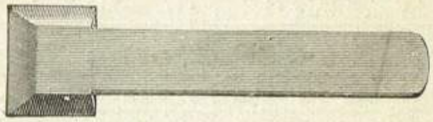
1016 Mitre Plane Irons, 10in. by 2¾in. 1/9, 10in. by 3in. 2/-, 10in. by 3¼in. 2/3 each.



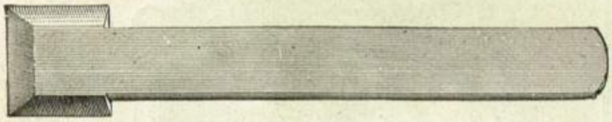


1017 Skew Parallel Badger Irons, 2¼in. Single, 1/1. Ditto Double, 1/10 each.
1018 Toothing Irons, 2in., Fine, Medium, or Coarse, 1/- each.
1019 Jarvis Plane Irons, 2¼in. Single 2/-. Ditto Double, 3/- each.



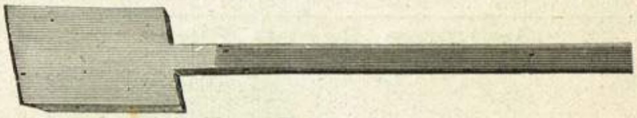


1020 Short Uncut Plane Irons to 1¼in. 5d., 1½in. 5½d., 1¾in. 6d. each.
1021 Bright Parallel Chariot Plane Irons, 1⅛in. 8d., 1¼in. 8d., 1½in. 9d. each.
1022 Bright Bull-nose Irons to 1¼in. 7d. each.



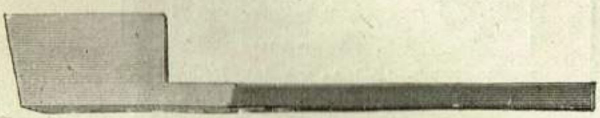
1023 Bright Shoulder Plane Irons, 1¼in. 8d., 1½in. 9d.
1024 T Rabbet Plane Irons 1¼in. 7d., 1½in. 8d., 1¾in. 9d., 2in. 10d. each.

Square Rabbet Iron.



Skew Rabbet Iron.

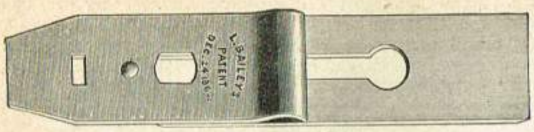
1025 Rabbet Plane Irons, Square or Skew, ½in. to 1in. 4½d., 1¼in. 5d., 1½in. 5½d., 1¾in. 6d., 2in. 7d. each.
1026 Side Rabbet Irons 9d. each.
1027 Best Bright Plough Irons, 4/6 per set of 8. Nos. 1 to 8, 7d. each.

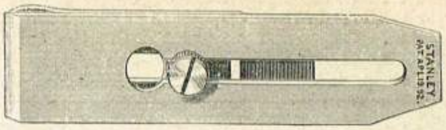


1028 Sash Fillister Irons, right or left hand, 6d. each.
1029 Soft Moulding Irons to 1in. 3½d., 1¼in. 4d., 1½in. 4½d., 2in. 5½d., 2¼in. 6½d., 2½in. 8d. each.

1030 Match Plane Irons ⅝in. to 1in. 1/- per pair.
1031 Bead Plane Irons ⅛in. to ¾in. 10d. each; ⅞in. and 1in. 1/- each.
1032 Hollow and Round Irons, Nos. 2 to 12, 1/3 per pair.
Nos. 14 to 18, 1/6 per pair.
1033 Joiners' Bright Double-ended Quirk Cutters or Router Irons 1/- ea.
1034 Coach Router Irons to ¾ in. 8d. each.
1035 Best Bright Top Irons with Screws to 2¼in. 7d., 2½in. 8d., 2¾in. 9d.

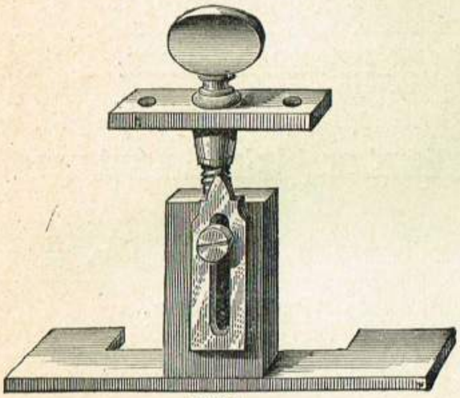
American Patent Plane Irons for Stanley Planes.


1037

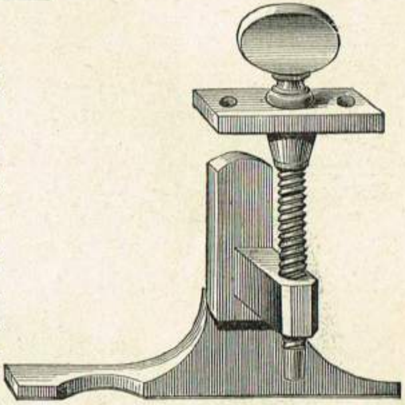

1037

		1¼	1⅝	1¾	2	2⅛	2¼	2⅜	2⅝ in.
1036	Single Irons ...	8d.	8½d.	9½d.	10d.	11d.	1/-	1/-	1/1 each.
1037	Double Irons ...	1/1	1/3	1/4	1/5	1/6	1/7	1/8	1/9 per pair.

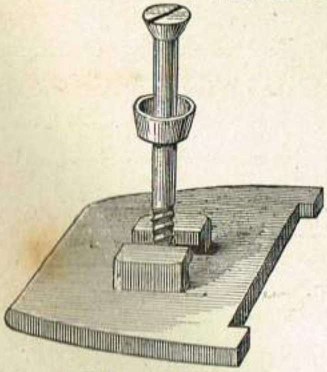
Plane Stops and Fittings.


1038

1038 Best Plough Stop with Side Screw and Church Window, 2/- each.
1039 Best Plough Plates with Rivets, 1/9 per pair. Ditto, if Skate Ended, 2/6 per pair.
1040 Best Plough Stops with long Steel Plates for Handled Ploughs, complete with Rivets and Church Windows, 5/-each.
1041 Brass Ferrules for Plough or Fillister Stems, 2d. each.


1043 Left Hand.

1042 Screw Cups and Diamonds for Plough and Fillister Fences, 3d. each.
1043 Best Left Hand Sash Fillister Stops, 2/- each ; Ditto Right Hand, 1/6 each.
1044 Best Moving Fillister Stops, 1/9 each.
1045 Slip Stops for Moving Fillister, 9d. each.
1046 Fillister Cutters, 6d. each.
1047 Boxwood Wedges for ditto, 2d. each.
1048 Best Screw Stops for Compass Planes, 1/6 each.
1049 Ditto ditto for Dado Groove Planes, 1/6 each.
1050 Fences for Coachmakers' Fence Grooving Routers, 1/6 each.

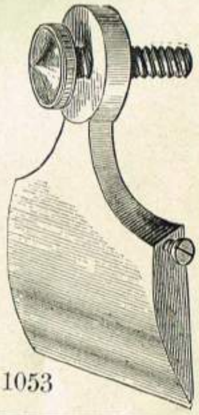

1051 and 1052

Iron Fronts and Metal Levers.

1051 Iron Fronts for 2¼in. Smooth Planes, Improved Pattern with Rounded Edge, complete with Screws and Nuts, 1/6 each.

1052 Ditto, ditto, for 2in., 2⅛in., 2⅜in., or 2½in. Smooth Planes, 1/6 each.

1053 Best Quality Gun-metal Screw Levers for Iron or Gun-metal Smooth Planes, 2in., 2⅛in., or 2¼in., 2/- ; 2⅜in., 2/3 ; 2½in, 2/6 each.


1053

Best Metal Plane Castings.

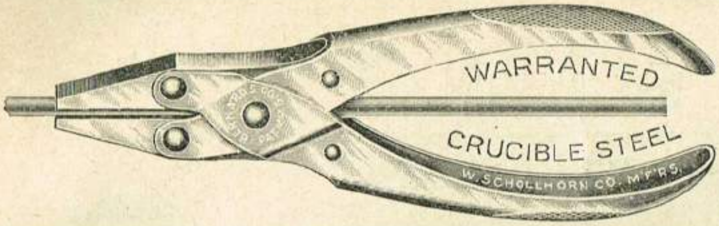
Planed Ready for Inside Fittings.

1054 Malleable Shoulder Planes, 1in. 7/3, 1¼in. 7/3, 1½in. 7/6 each.
1055 Gun-metal ditto, Steel Face, 1in. 12/6, 1¼in. 12/6, 1½in. 13/- each
1056 Malleable Iron Rabbet Planes, 4½ by ½in. 4/-, 8in. by ¾in. 6/-, 8in. by 1in. 6/6 each.
1057 Malleable Bull-nose, 1in. 3/-, 1⅛in. 3/3, 1¼in. 3/6 each.
1058 Gun-metal ditto, with Steel Face, 1in. 5/6, 1⅛in. 5/9, 1¼in. 6/- each.
1059 Malleable Chariot Planes, 1⅛in. 3/6, 1¼in. 4/6, 1½in. 5/3 each.
1060 Gun-metal ditto, with Steel Face, 1⅛in. 5/6, 1¼in. 6/6, 1½in. 7/6 each.

Pliers and Pincers.

The "Bernard" Patent Pliers (with Hollow Open Throats).

These Pliers are constructed on an entirely new principle, of crucible steel throughout, including rivets. Their quality is superior to that of all others, and their durability, strength, and gripping or cutting power is double that of any other plier in the market. They are nickel-plated, the Cutting Pliers with steel bolts and lock-nuts, together with other improvements, making these goods as near to perfection as possible. The cutters, when worn or broken can easily and cheaply be replaced, all parts being interchangeable. The superiority of Bernard's Pliers is now universally conceded.

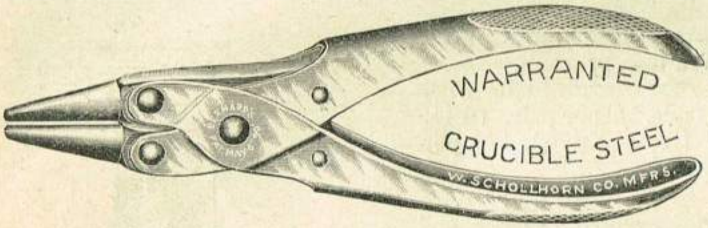


Flat-nose Pliers.

	Sizes	4½	5½	6½	7½in. (extra heavy).
1061	Prices	1/8	2/-	2/6	3/6 per pair.

Jewellers' or Light Flat-nose Pliers.

	Sizes	3½	4	4½	5in.
1062	Prices	1/6	1/9	2/-	2/3 per pair.

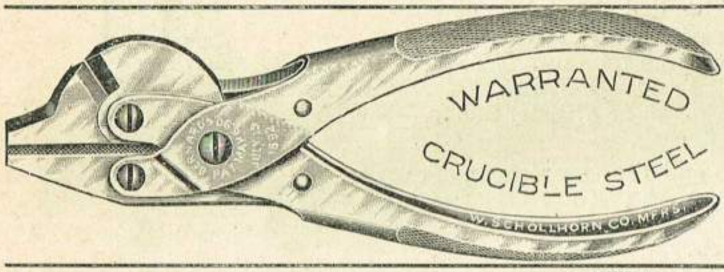


Round-nose Pliers.

	Sizes	4½	5½	6½	7½in.
1063	Prices	1/8	2/-	2/6	3/6 per pair.

Jewellers' or Light Round-nose Pliers.

	Sizes	4	4½	5in.
1064	Prices	1/9	2/-	2/3 per pair.

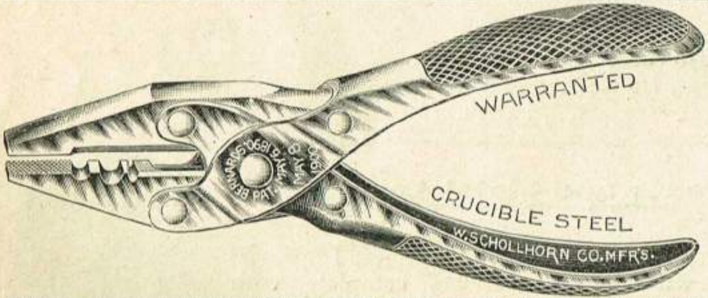


Cutting Pliers.

	Sizes	4½	5½	6½	7½in. (extra heavy).
1065	Prices	2/9	3/3	4/-	5/6 per pair.

Jewellers' or Light-cutting Pliers.

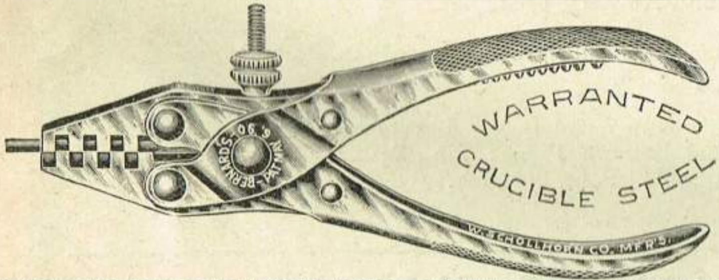
1066 Price, 5in. ... ... 2/9 per pair.



Electricians' Pliers.

1067 Price, 5½in ... ... 2/6 per pair.

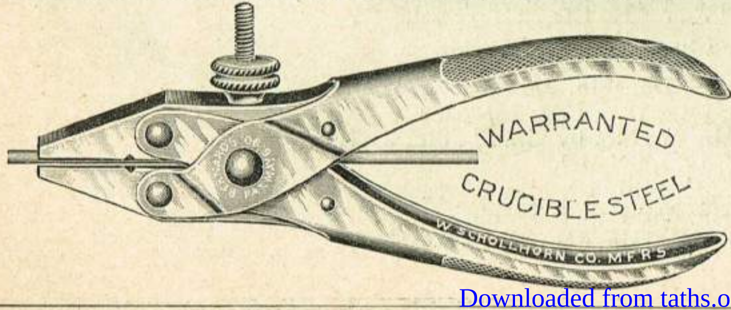
This Plier is especially made for cutting and stripping Insulated Wire.



Drill-rod Pliers.

1068 Price, 6½in. ... ... 3/- per pair.

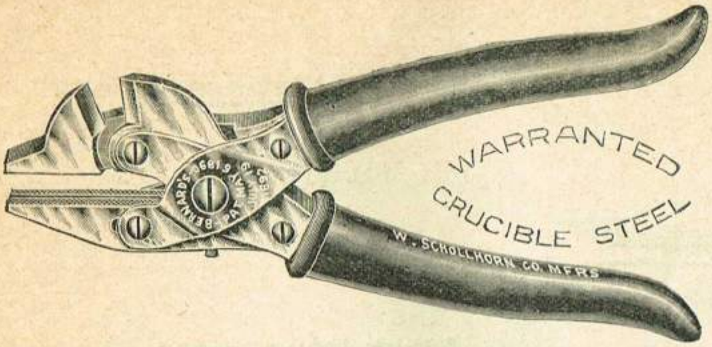
This Plier is especially made for holding Drills, Rods, etc.



Vice Pliers.

1069 Price, 6½in. ... ... 3/- per pair.

This Plier can be used as a Wrench or Hand Vice for small articles.

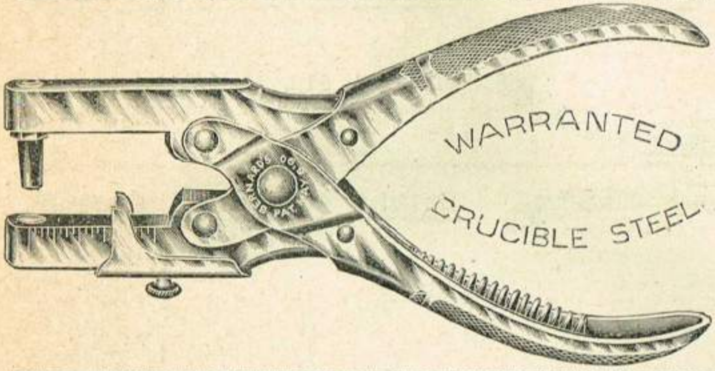


Electrical Cutting Pliers.

1070 8in., 6/6 per pair.

The Handles of these Pliers are protected with Rubber Covers.

Open Throat, Parallel Jaws, Full Nickel-plated.

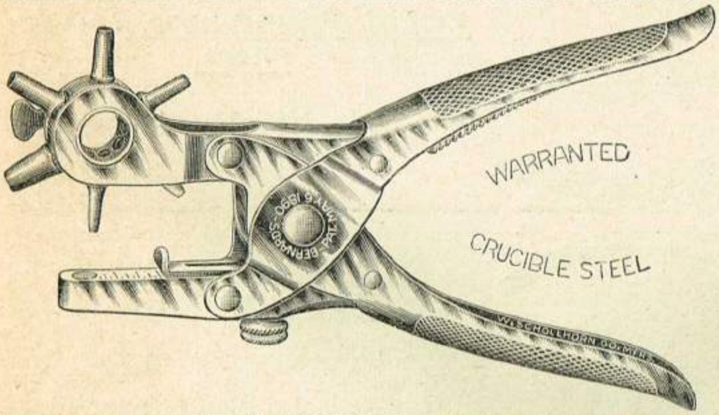


Spring Belt Punches.

1071 7in., 3/- per pair.

With Screw Tube and Adjustable Gauge.

Open Throat, Parallel Jaws, Full Nickel-plated.

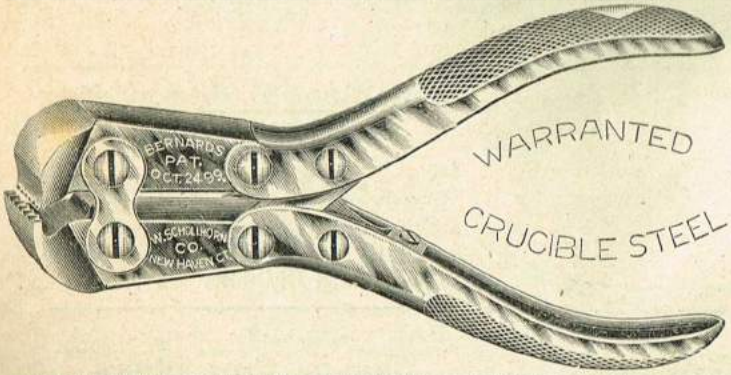


Revolving Belt Punch Pliers.

1072 8in., 4/6 per pair.

With 6 Screwed Tubes and Adjustable Gauge.

Open Throat Parallel Jaws, Full Nickel-plated.



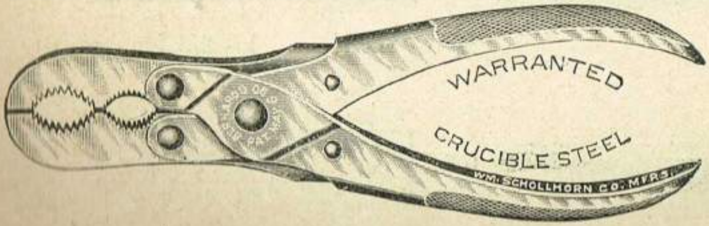
Music Wire Nippers.

1073 5 in., 4/3 per pair.

Made especially for cutting Music Wire, Cycle Spokes, &c.

Extra Jaws 1/3 per pair.

Full Nickel-plated.



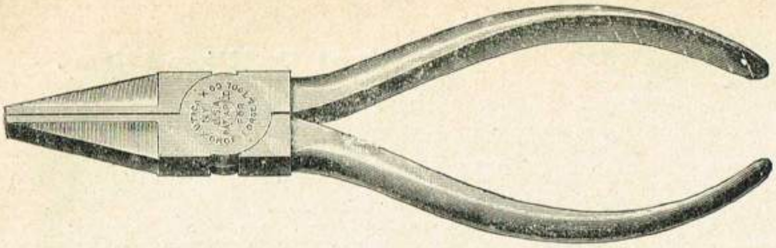
Improved Gas Pliers.

1074 7in., 2/9 per pair.

Open Throat, Parallel Jaws.
full Nickel-plated.

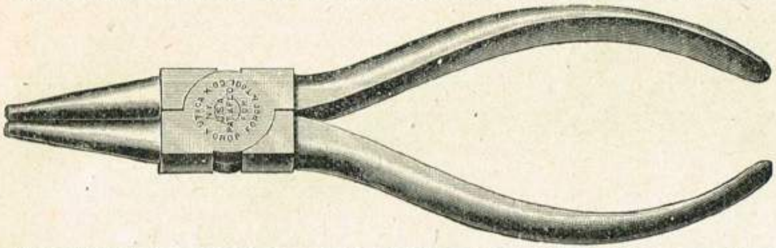
Pliers and Pincers—*continued.*

The following lines of Pliers are exceptionally good, and after having submitted them to very severe tests, we have the utmost confidence in recommending them :



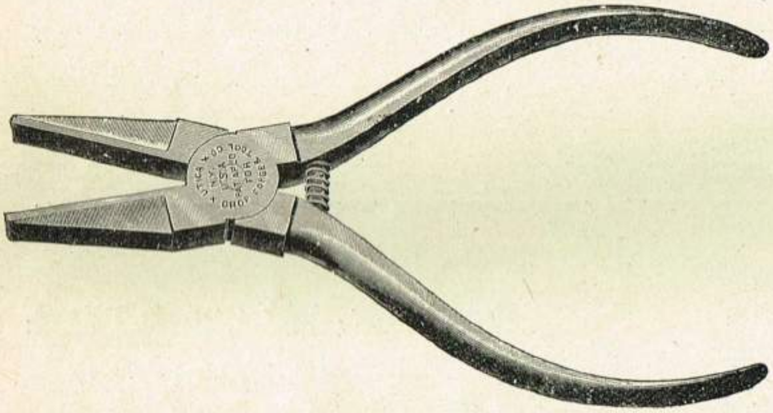
Black Flat-nose Pliers.

	4	4½	5	5½	6	in.
1075	10d.	11d.	1/-	1/2	1/4	per pair.



Black Round-nose Pliers.

	4	4½	5	5½	6	in.
1076	10d.	11d.	1/-	1/2	1/4	per pair.

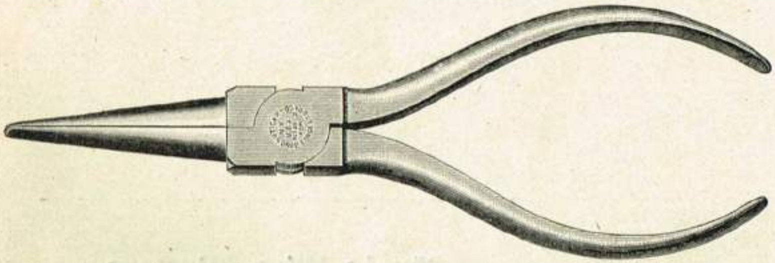


Bright Flat-nose Spring Pliers.

	4	4½	5	5½	in.
1077	1/3	1/4	1/8	2/-	per pair.
		6	7	8	in.
		2/4	2/8	3/-	per pair.

Bright Round-nose Spring Pliers.

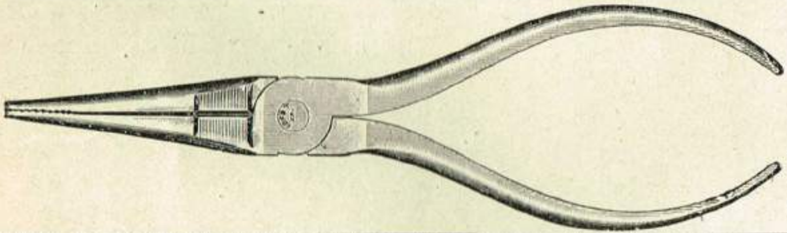
	4	4½	5	5½	in.
1078	1/3	1/4	1/8	2/-	per pair.
		6	7	8	in.
		2/4	2/8	3/-	per pair.



Convex and Concave Weavers' Pliers.

1079 5½in., 2/- per pair.

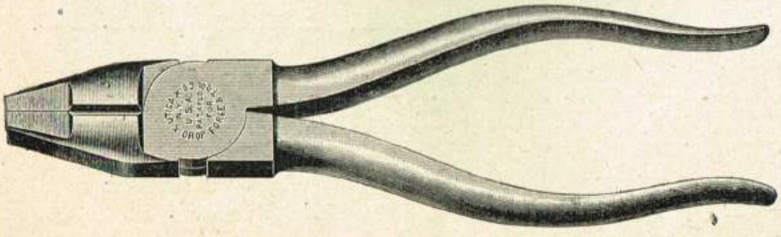
Will straighten Reeds under all conditions.



Long Reach Side-cutting Pliers.

1080 5½in., all bright, 3/- per pair.

The Long Nose is indispensable for working in deep and narrow places. Especially useful for Telephone and Switch Board Builders.

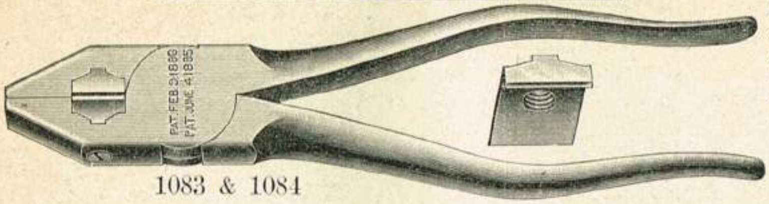


Best Quality Flat-nose Side-cutting Pliers.

		4	5	5½	in
1081	Black ...	2/-	2/3	2/6	per pair.
		6	7	8	in.
		2/9	3/-	4/-	per pair.
1082	Extra fine finish and Nickel-plated	4	5	5½	in.
		3/-	3/6	3/9	per pair.
		6	7	8	in.
		4/-	4/6	5/6	per pair.

Pliers and Pincers—*continued.*

Patent Reversible Jaw Pliers.

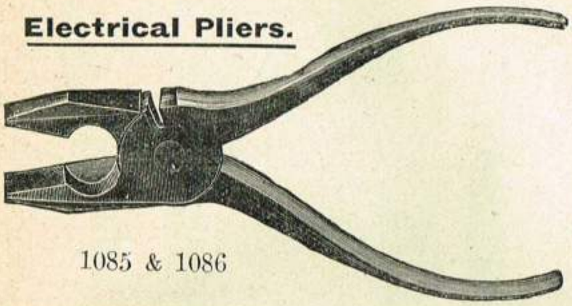


1083 & 1084

Patented Royal Blue Splicer and Side Cutting Plier, 8in. only. Reversible and renewable Jaws, and rounded sides and corners.

1083 Black, with Blue Head, 6/6 pair.
1084 Nickel-plated or Full Blued .... 7/6 „
Extra Cutting Jaws for same .... 1/6 „

Electrical Pliers.

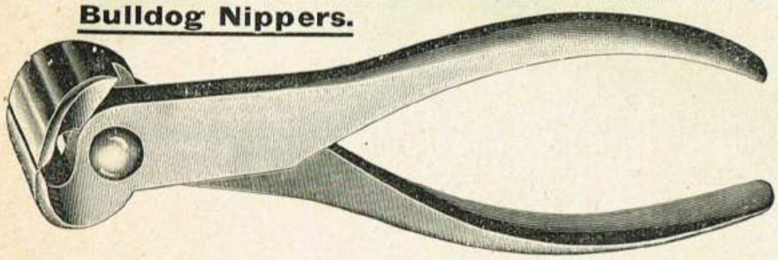


1085 & 1086

Improved Solid Cast Steel Machine-made Pliers, with large circular opening at back, specially designed for cutting covered electrical wires.

		5½	6	7	8in.	
1085	Black Flat Nose...	1/6	1/9	2/-	2/9	per pair.
1086	Bright ditto ...	1/9	2/-	2/6	3/3	„
1087	Black Half-round Nose..............	1/9	2/-	2/3	3/-	„
1088	Bright ditto	2/-	2/3	2/9	3/6	„

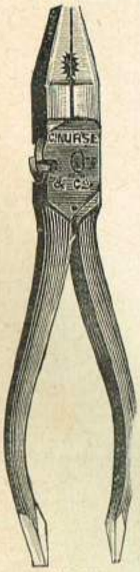
Bulldog Nippers.



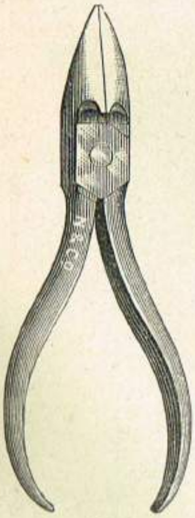
Best Bulldog End Cutting Nippers.

	5½	6	7in.	
1089	2/6	3/-	3/6	per pair.

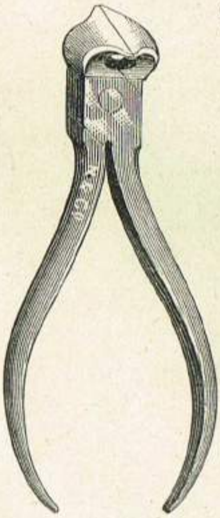
Cutting Nippers—Various.



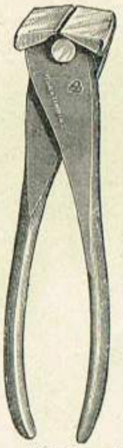
1090



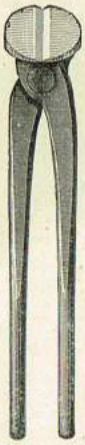
1091



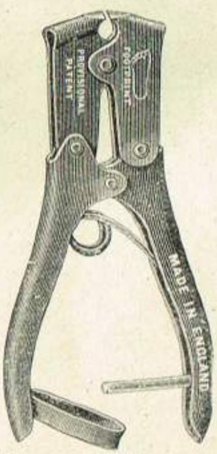
1092



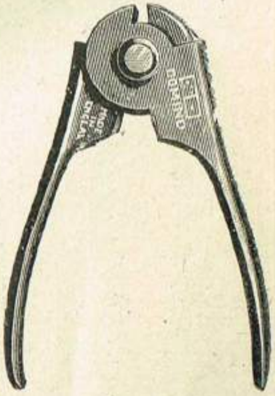
1093



1094 & 1095



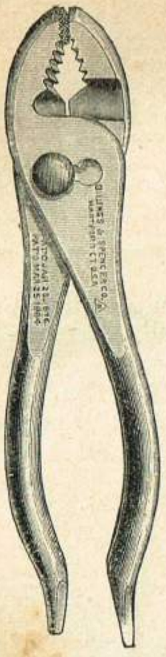
1096



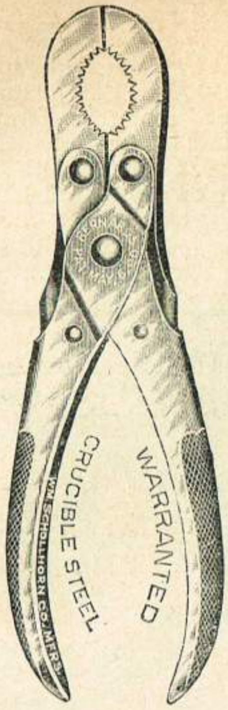
1097

1090 Flat-nose Burner and Side-cutting Pliers 5in. 2/-, 6in. 2/3, 7in. 2/6 per pair.
1091 Best Side-cutting Nippers 4in. 1/9, 4½in. 2/-, 5in. 2/3, 5½in. 2/3, 6in. 2/6 per pair.
1092 Best Front-cutting Nippers 4in. 1/9, 4½in. 2/-, 5in. 2/3, 5½in. 2/3, 6in. 2/6 per pair.
1093 Hercules Cutting Nippers 7in., to cut No. 8 Wire, 3/- per pair; 12in., to cut ¼in. Iron Wire, 6/6 per pair.
1094 Birmingham-made Manchester Cutting Nippers 8in. 5/-, 10in. 6/-, 12in. 7/- per pair.
1095 Best Lancashire-made ditto 8in. 6/-, 10in. 7/6, 12in. 9/- per pair.
1096 Footprint Bicycle Spoke Nippers 6¾in. 2/3 per pair.
These will cut hard wire to 15 gauge, and soft wire to 9 gauge. Makers state that every pair has been tested fully before being sent out, and they will not replace these if broken.
1097 Domino Pocket Wire Cutters, 6d. per pair.

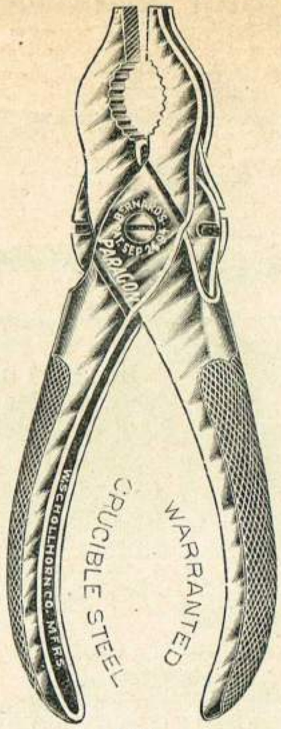
Pliers and Pincers—*continued.*


BURNS & SPENCER CO.

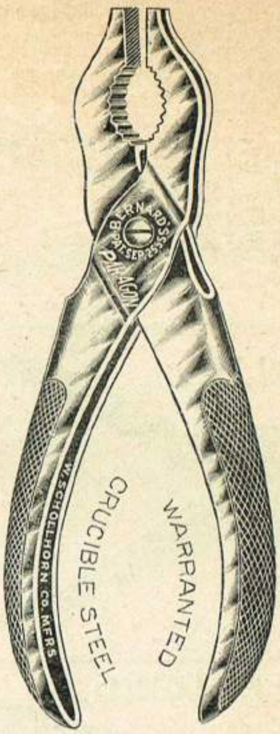
1098



1100



1101



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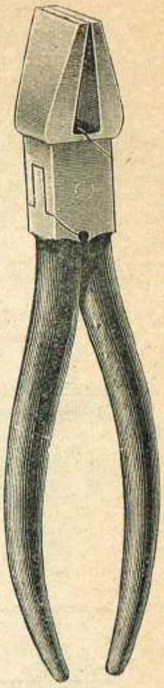
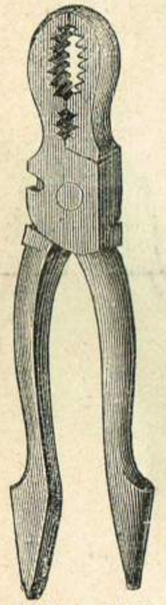
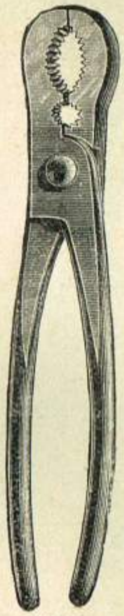


1103

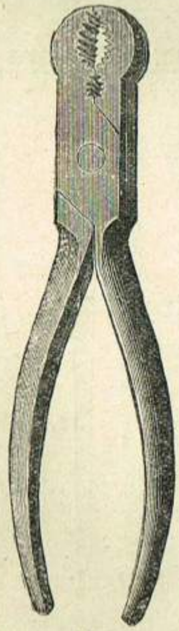
1098 Superior Combination Gas Pliers, Black, 6in. 3/6, 10in. 4/9 per pair.
1099 Ditto Ditto Nickel-plated, 6in. 4/-, 10in. 5/6 per pair.
1100 Bernard Gas Pliers, Open Throat, Parallel Jaws, Nickel-plated, 5in. 2/-, 6in. 2/6 per pair.
1101 Paragon Gas and Cutting Pliers, Nickel-plated, 6in. 1/9, 7in. 2/- per pair.
1102 Paragon Gas Pliers, Nickel-plated, 6in. 1/-, 7in. 1/3 per pair.
1103 Improved Plate Glass Pliers, 6in. 2/-, 7in. 3/- per pair.



1104 & 1105



1106



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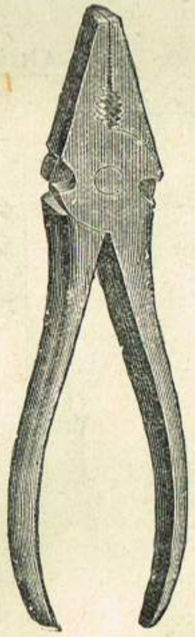
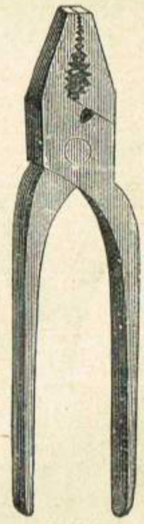


1108



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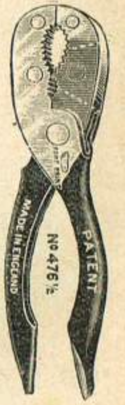
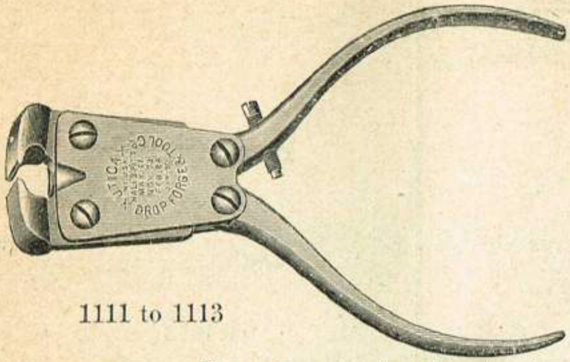


1110

1104 All Steel Gas Plier, with Wire-cutter, Pipe Opener, and Turnscrew End, 6in. 1/9, 8in. 2/6, 9in. 3/-, 10in. 3/3 per pair.
1105 All Steel Gas Plier, with Wire-cutter, all Bright, 6in. 2/-, 8in. 3/-, 9in. 3/6, 10in. 3/9 per pair.
1106 Improved Pattern Two-hole Gas Pliers, 6in. 1/3, 8in. 1/9, 9in. 2/-, 10in. 2/3, 12in. 3/- per pair.
1107 All Steel Bright Burner Pliers, 1/3 per pair.
1108 Ditto Ditto with 2 Wire-cutters, 1/6 per pair.
1109 All Bright Burner Pliers, with one Wire-cutter, 1/- per pair.
1110 Footprint Gas and Burner Pliers, 6½in. 1/6, 8in. 1/9, 9in. 2/- per pair.

Compound Cutting Nippers.

Can be kept as new, all parts are interchangeable.
The most powerful nipper on the market.
Forged from the best tool steel.

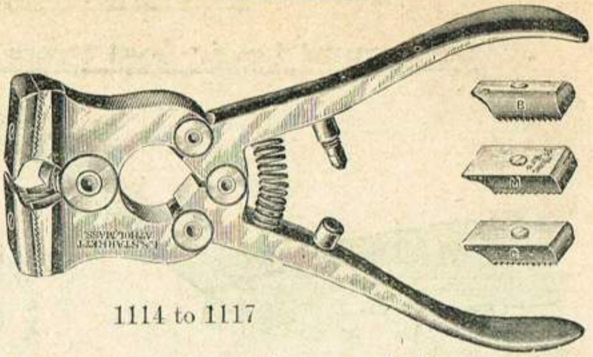


1111 to 1113

	No.	1	2	3	4	6	9	
		4in.	5in.	6in.	7in.	8in.	11in.	
1111	Regular Finish	3/-	3/6	4/6	5/-	6/-	7/-	per pair
1112	Nickel-plated	4/3	4/6	6/-	6/6	7/6	8/6	,,
	Will cut wire up to	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	in.

	Bicycle Spoke Nippers.	5in.	6in.	
1113	Nickel-plated finish ...	4/6	6/-	per pair

Starrett's Adjustable Jaw Cut-Nippers.



1114 to 1117

The $5\frac{1}{2}$in. Nippers open $\frac{1}{8}$in., and the 7in. open $\frac{5}{32}$in.

1114	$5\frac{1}{2}$in., M (for music wire) ...	8/6	per pair
1115	$5\frac{1}{2}$in., C (for common use) ...	8/6	,,
1116	$5\frac{1}{2}$in., B (for bicycle use) ...	8/6	,,
1117	7in., either M, C, or B ...	10/6	,,
	Extra Jaws, either M, C, or B, which should be designated as above ...	2/-	,,

Unless otherwise ordered, Cut-Nippers with C jaws will be sent.

Pin Stapling Tool.

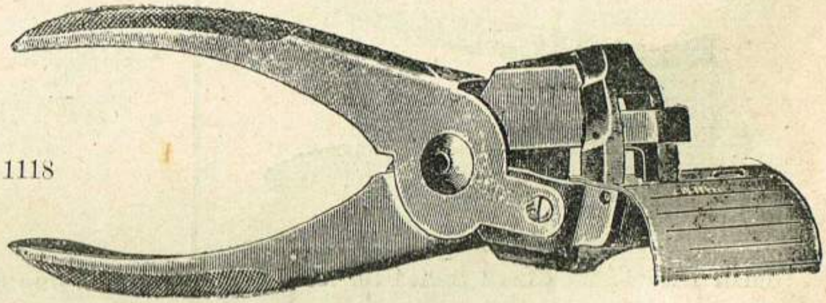
1118 Pin Stapling Tool, for Binding Legal Papers, Bills, Stock Sheets, Statements, Dry Goods Samples, etc. No special supplies are required; any ordinary brass pin, such as is used in every office, is all that is necessary to make a complete staple. Use a pin long enough to extend across the head of the tool, inserting it through the holes as shown in the cut.

Form the Staple by a quick pressure on the handles, cutting off both head and point of the pin. Then open the tool; the staple will be held between the cutters ready for use.

Price 7/- each.

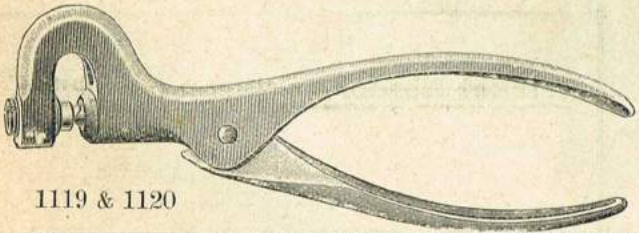
Pins No. 4 and No. 5, which are sizes most generally used are specially suitable for this tool.

1118



After the Staple is made the articles to be fastened are placed in position and the Staple driven by an easy pressure on the handles The Staple must be made before placing the articles to be bound in position.

Universal Plier Punch.



1119 & 1120

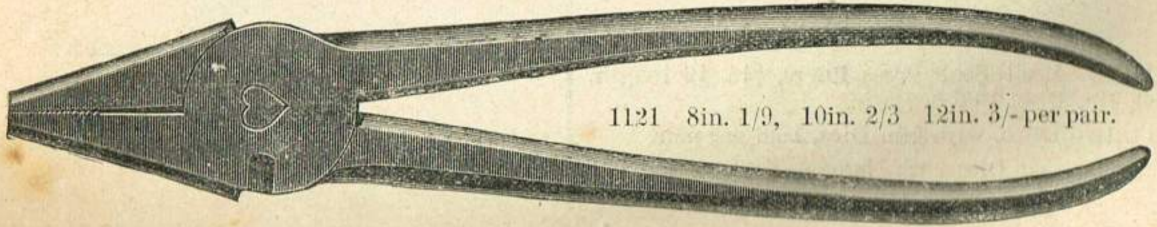
These Punches are designed to Punch Holes in Leather, Rubber, Cloth, Paper, Tin, and Sheet Metal. They are made of best materials, and all parts are interchangeable.

1119 No. 1 Length 7in. Dies either $\frac{3}{32}$, $\frac{1}{8}$, or $\frac{3}{16}$in. 4/- per pair.

1120 No. 2. Length 9in. Dies $\frac{1}{4}$in. 5/- per pair.

Cast Steel Fencing Pliers.

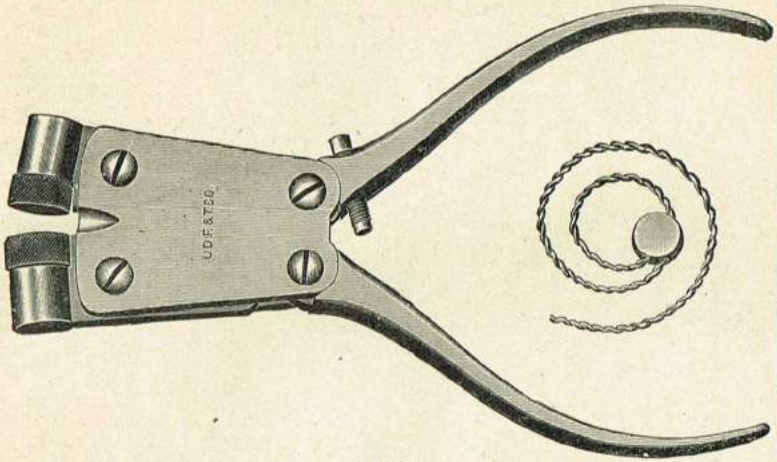
10in. will cut No. 8, and 12in. will cut No. 6 wire.



1121 8in. 1/9, 10in. 2/3 12in. 3/- per pair.

Seal Press Pliers and Seals.

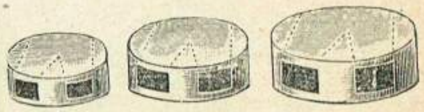
Compound Lever Seal Press Pliers.



1121A

6in., 7/6 8in., 9/6 11in., 11/- per pair.

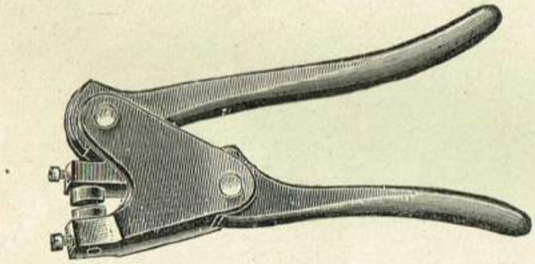
Lead Seals.



1121E

$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$in.	
4/-	5/-	6/-	7/6	9/6	14/-	per 1,000.

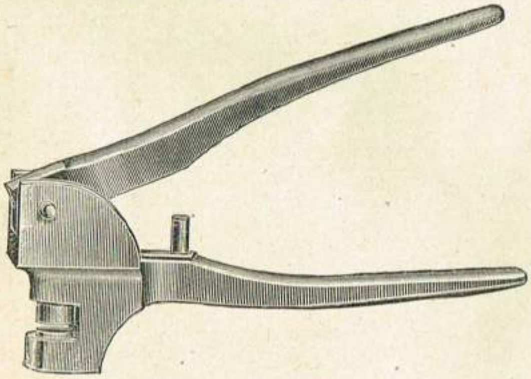
Nickel-plated Seal Press Plier.



1121B

Small Nickel-plated Lead Sealer, for Milk Cans, Electrical Instruments, &c., with $\frac{7}{16}$in. Dies, suitable for $\frac{7}{16}$in. and $\frac{1}{2}$in. Seals.

Length 6in. ... ... price 7/6 per pair.

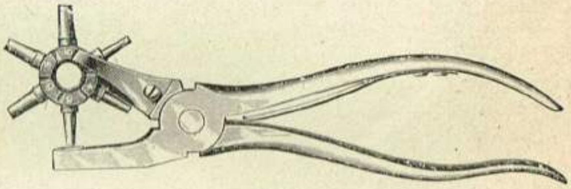


1121C Lead Seal Press Pliers, 8in. in length, with $\frac{1}{2}$in. Dies, 12/6 per pair.

1121D Ditto, with $\frac{5}{8}$in. Dies, 16/6 per pair.

Engraving Dies with Name or Trade Mark, from 4/6 extra.

Revolving Punch Pliers.

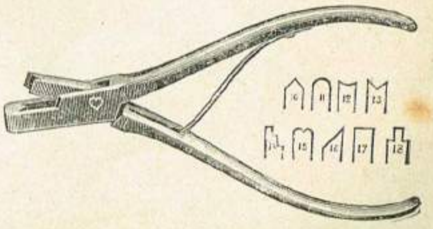


1121F

Containing Six Best Quality Screwed Punches of various sizes, 4/6 per pair.

Extra Punches for same, 6d. each.

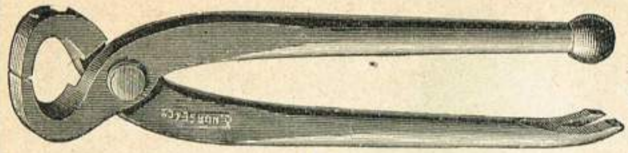
Ticket Nipper or Sheep-ear Plier.

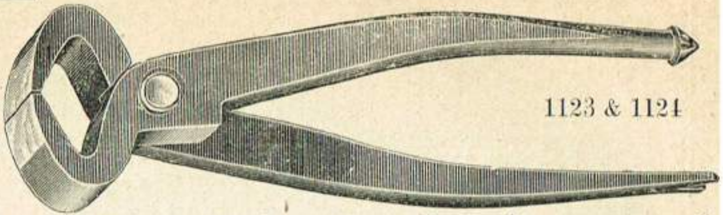


1121G

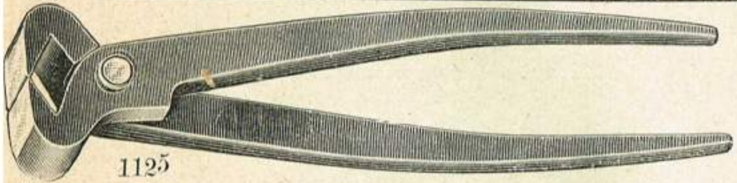
Price 2/- per pair, with either pattern Die as shown.

Pincers—*continued.*


1122

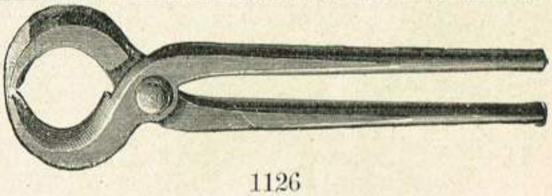

1123 & 1124

		5	6	6½	7	7½	8	8½	9in.
1122	Best Tower Pincers..............	—	8d	10d.	1/-	1/2	1/4	1/6	1/9 per pair.
1123	Ditto Lancashire.................	—	1/6	1/8	1/9	1/10	2/-	—	— ,,
1124	Ditto Bright.......................	1/8	2/-	—	2/6	—	3/-	—	— ,,


1125

Lancashire Cutting Nippers.

6in. 1/6, 7in. 1/9, 8in. 2/- per pair.


1126

Farriers' Pincers.

10in. 1/9, 11in. 2/3, 12in. 2/9, 13in. 3/3 per pair.

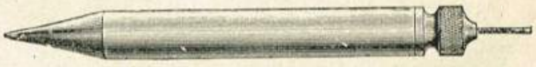
Pencils.

1127 **Round Cedar Pencils**, 4d., 6d., 8d. per doz.
1128 **Oval Deal Joiners' Pencils**, 4½d. per doz.
1129 **Oval Cedar Joiners' Pencils**, 6d., 8d. per doz.

Plumb Bobs.

1130 Lead Plumb Bobs from 8oz. to 3lb., 7d. per lb.

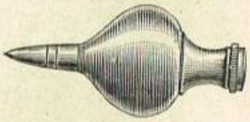
1131 Brass Plumb Bobs 2½oz. 1/-, 3½oz. 1/2, 4½oz. 1/4, 6oz. 1/6, 8oz. 1/9, 10oz. 2/-, 13oz. 2/3, 16oz. 3/-, 1¼lb. 4/-, 1½lb. 5/-, 2lb. 6/6, 2½lb. 8/-, 3lb. 9/6, 4lb. 11/6 each.


1132

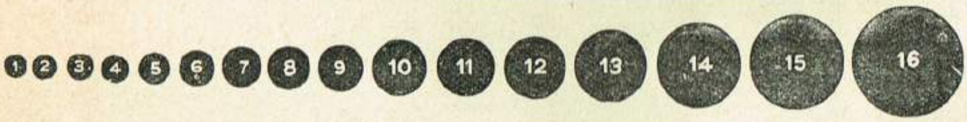
Nickel-plated Mercury Plumb Bobs.

1132	3½oz	4in. long	½in. diameter	5/- each.
	6 ,,	4½in. ,,	⅝in. ,,	7/- ,,
	12 ,,	5⅜in. ,,	⅞in. ,,	9/- ,,
	16 ,,	6in. ,,	1in. ,,	11/6 ,,

1130


1131

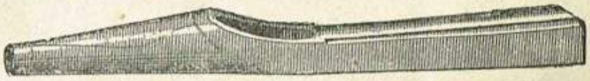
Punches—Various.

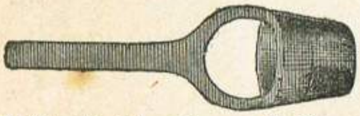


1133 New Pattern All-steel Saddlers. Punches.

Nos. 0 to 6	7 & 8	9	10	11
5d.	6d.	7d.	8d.	9d. each.
No. 12	**13**	**14**	**15**	**16**
10d.	11d.	1/-	1/2	1/4 each.

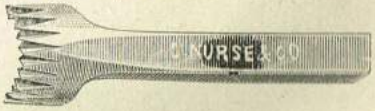
1134 Saddlers' Hollow Punches Nos. 0 to 6, 5d.; 7 & 8, 6d.; 9, 7d.; 10, 8d.; 11, 9d.; 12, 11d. each.

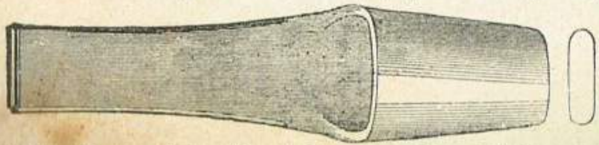




1135 Wad Punches, ½in. 9d., ⅝in. 10d., ¾in. 1/-, ⅞in. 1/9, 1in. 2/3, 1⅛in. 2/9, 1¼in. 3/6, 1⅜in. 4/6, 1½in. 5/6 each.

1136 Pinking Irons, Half-round with V Tooth, ⅝in. 9d., ¾in. 10d., ⅞in. 11d., 1in. 1/-, 1⅛in. 1/2, 1¼in. 1/4 each.





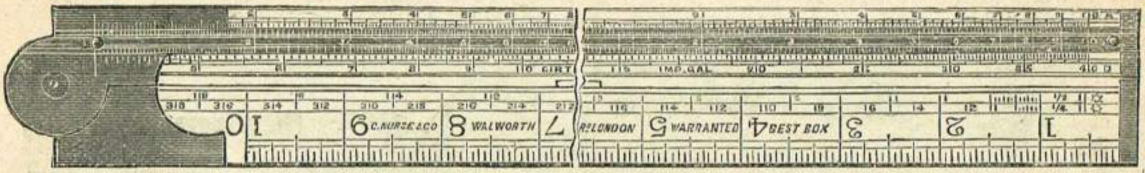
1137 Venetian Blind Cutting Punch 2/9 each.

1138 Button-hole Hand Punches, ⅝in. 1/4, ¾in. 1/6, ⅞in. 1/9, 1in. 2/- each.

Rules, Jointed Laths, and Tape Measures.

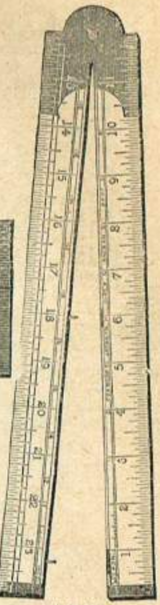
Rules—Boxwood, 2ft., 2-Fold.

1139 Boxwood, 2ft. 2-Fold, with Arch Joints ... ... 9d. and 1/- each.
1140 Ditto, Degrees on Joints, 4 Scales, 8 Square Line ... ... 1/- „
1141 Ditto, ditto, 4 Bevelled Edges, 8 Scales, inches in 8ths, 10ths, 12ths, 16ths 2/6 „
1142 Boxwood, 2ft. 2-Fold, with Brass Slide ... ... 1/- and 1/6 „
1143 Best Boxwood, 2ft. 2-Fold, Brass Slide, and Gunter's Line ... ... 2/- „



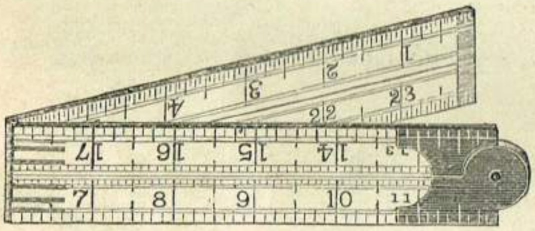
1144

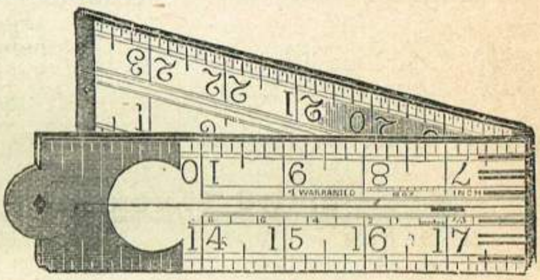
1144 Best Boxwood, 2ft. 2-Fold, Brass Slide, with Gunter's Line, 8 Square Line and Scales... ... ... 2/6 and 3/- each.
1145 Ditto, ditto, Best Brass Slide, 2 Brass Bound Edges, 1 Edge Bevelled ... 4/- „
1146 Ditto, ditto, Routledge's Best Engineers' Slide Rule ... ... 3/6 „
1147 Bradburn's Patent Bolted Joint, 2ft. 2-Fold Boxwood Rules ... 2/- and 2/6 „
1148 Ditto ditto with Slide ... ... 2/6 and 3/- „
1149 Ditto ditto with Routledge's Engineers' Slide ... 4/6 „
1150 Instruction Books on Slide Rules, Joiners' 3d., Engineers' 4d. each.



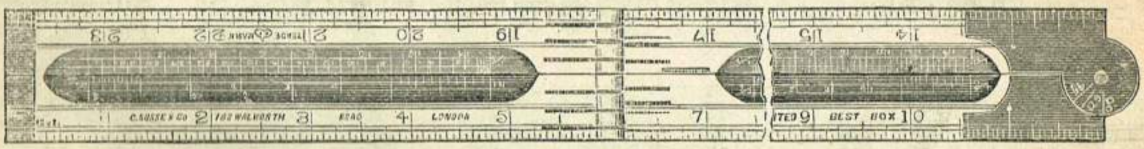
1139

Rules—Boxwood, 2ft., 4-Fold.





1151 Boxwood, 2ft. 4-Fold Rules ... ... 6d., 9d., 10d., and 1/- each.
1152 Ditto ditto with Arch Joints ... ... 1in., 9d. ; 1⅛in., 1/- ; 1¼in., 1/- ; 1½in., 1/3 „
1153 Ditto ditto with Double Arch Joints ... 1in., 1/6 ; 1⅛in., 1/6 ; 1¼in., 1/9 „
1154 Ditto ditto with Brass-bound Outside Edges 1in., 1/6 ; 1⅛in., 1/9 ; 1¼in., 2/- „
1155 Ditto ditto with Brass-bound Inside and Outside Edges ... 1⅛in , 2/6 ; 1¼in., 3/- „

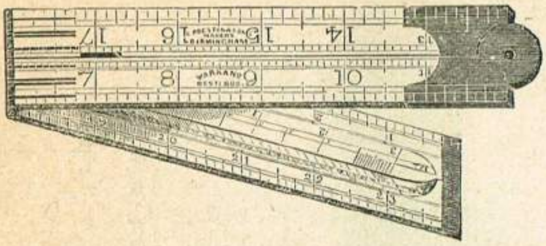


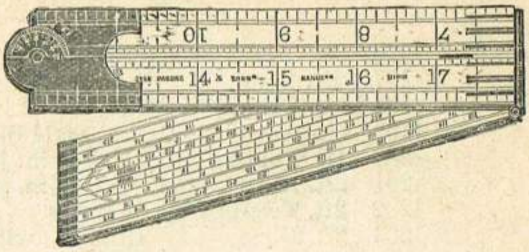
1156 Boxwood, 2ft. 4-Fold, with Inside Edges Bevelled, 1in. ... ... 1/6 each.
1157 Ditto ditto and with Brass Edge Plates, 1⅛in. ... ... 2/3 „
1158 Extra Best Boxwood, with Steel Plates in Joints, 4 Bevelled Edges and 8 Scales, 1in., 2/6 ; 1⅛in., 2/9 ; 1¼in., 3/- each.
1159 Best Boxwood German Silver Arch Joints, 4 Bevelled Edges and 8 Scales, 1in. wide, 3/3 ; 1⅛in., 3/9 each.
1160 Best Boxwood, German Silver Arch Joints, with 16 Scales, 1⅛in. wide ... ... 4/- each.
1161 Ditto ditto ditto with Edge Plates and 16 Scales, 1¼in. wide 5/6 „
1162 Ditto ditto ditto with Edge Plates, 16 Scales, & Slide, 1¼in wide 7/- „
1163 Ditto ditto ditto with Edge Plates, 16 Scales, and Calliper Gauge, 1¼in. wide, 7/- each.
1164 Best Boxwood, German Silver Arch Joints, with 8 Bevelled Edges, 8 Drawing Scales, and 4 Chain Scales, 1⅛in. wide, 5/6 each.
1165 Boxwood, 2ft. 4-Fold Rule, with Brass Slide ... ... 2/- each.
1166 Best Boxwood, 2ft. 4-Fold Rule, with Brass Slide, Scales and Timber Table ... ... 3/- „
1166A Ditto ditto with Spirit Level and Marked Full Degrees on Joint 4/- „

Rules—*continued.*

Ivory Rules—1ft. and 2ft., 4-Fold.

1167 1ft. 4-Fold Ivory Rules, Round Joint, ½in. wide, 2/-, ⅝in. wide, 2/6 each.
1168 1ft. 4-Fold Ditto German Silver Square Joint, ⅝in. wide, 3/6 each.
1169 1ft. 4-Fold Ditto German Silver Arch Joint, ¾in. wide, 5/- each.
1170 1ft. 4-Fold Ditto ditto and with German Silver Calliper Guage, 10/6 each.





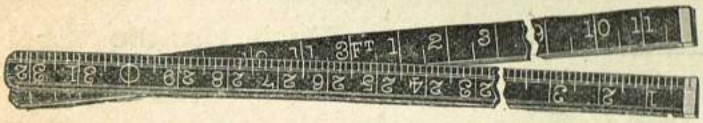
1171 2ft. 4-Fold Ivory Rules, German Silver Arch Joints, ¾in. wide, 10/6; 1in. wide, 13/- each.
1172 2ft. 4-Fold Ditto ditto with G. S. Edge Plates, ¾in. wide, 13/- ; 1in. wide, 15/6 each.
1173 2ft. 4-Fold Ditto with Inside Edges Bevelled and Marked with 16 Drawing Scales, 1in. wide, 15/- each.
1174 2ft. 4-Fold Ditto ditto and with Degrees on Joint, 1⅛in. wide, 18/- each.
1175 2ft. 4-Fold Ditto ditto Inches in 8ths and 16ths Outside and Inside, and Degrees on Joints, 1¼in. wide, 21/- each.
1176 2ft. 4-Fold Ditto ditto with 8 Scales, 4 Chain Scales, and Degrees on Joint, 1⅛in. wide, 21/- each.

Engraving Customers' Names on Joints of Rules, 1/- each.

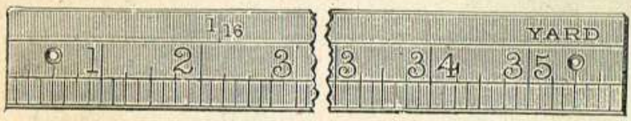
Boxwood Rules 1ft., 3ft., and 4ft.; also Boxwood Gauges.

1177 1ft. 4-Fold Boxwood Rules, 6d. 9d. and 1/- each.
1178 1ft. 4-Fold Ditto ⅝in. wide, German Silver Arch Joints, 2/- each.
1179 1ft. 4-Fold Ditto with Calliper Gauge, 2/6 each.
1180 3ft. 4-Fold Ditto with Arch Joints, 1⅛in. 1/3, 1¼in. 1/6 each.
1181 3ft. 4-Fold Ditto Best Quality, 1¼in. wide, 2/-, 2/6, and 3/- each.
1182 4ft. 4-Fold Coachmakers' Boxwood Rules, Best Quality, 1¼in. wide, 2/6 and 3/- each.
1183 Ditto ditto 1½in. wide, 3/- and 3/6 each.
1184 Ditto ditto 1½in. wide, with 12in. Brass Slide, 5/- each.
1185 6in. 2-Fold Boxwood Rule with Calliper Gauge, 1/3 each.
1186 Boxwood Rope and Chain Gauge, 4in. 2/-, 6in. 2/6 each.
1187 Boxwood Hat Gauge, 1/6 each.

Surveyors' Rods, Counter Measures, etc.



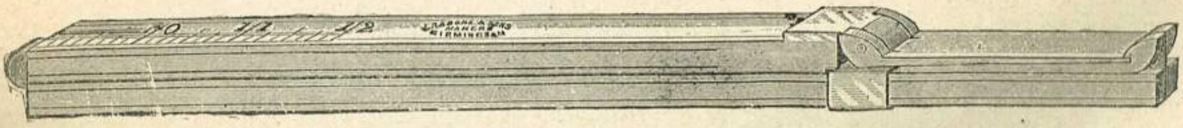
1188 5ft. Jointed Surveyors' Rods, with Spring Stop Joint, Lancewood, 3/6 each, or 6/6 per pair.
1189 5ft. Jointed Surveyors' Rods, with Spring Stop, Black with White Figures, 3/6 each, or 6/6 per pair.



1192 and 1193

1190 Straight Boxwood Laths, 3ft. by 1in. wide, 1/- each.
1191 Straight Boxwood Laths or Bench Rules, 1½in. wide by ¼in. thick, 2ft. 1/3, 3ft. 1/6, 4ft. 2/6, 5ft. 3/6, 6ft. 5/- each.

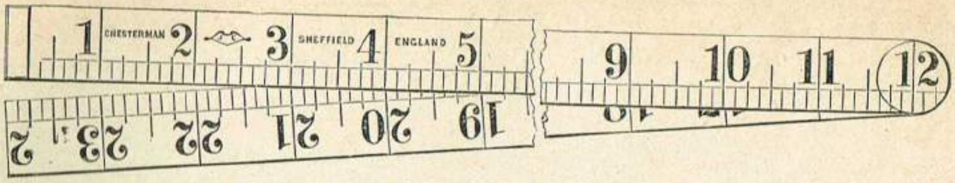
1192 3ft. Brass Counter Measures, marked $\frac{1}{16}$ths, ⅛ths, ¼yd., ½yd., etc., ¾in. wide, 1/9 each.
1193 3ft. Ditto 1in. wide, marked one edge in inches, and other in parts of a yard, 2/3 each.



1195

1194 Folding Shoemakers' Size Stick, Brass Feet, Inches, and Shoe Sizes, ½in. wide 1/-, ⅝in. wide 1/3 each.
1195 Ditto with Wood Feet, Inches and Shoe Sizes, ¾in. wide 1/6, 1in. wide 1/9 each.

Rules, Tape-measures, etc.—*continued.*

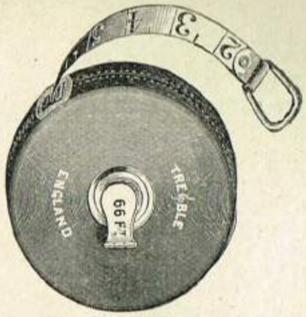


1196	2ft. Two-fold Steel Rules, with Stop Joints	1/3 each.
1197	2ft. Ditto ditto Best Quality, Machine Divided, $\frac{3}{4}$in. wide ...	1/9 ,,
1198	2ft. Ditto ditto ditto ditto $\frac{7}{8}$in. wide ...	2/- ,,
1199	6in. Ditto Pocket Steel Straight-edge	1/- ,,
1200	1ft. Folding Steel Rule, 4in. joints	8d. ,,
1201	2ft. Ditto ditto 4in. joints	1/- ,,
1202	2ft. Two-fold Brass Rules ... ... $\frac{3}{4}$in. wide, 7d., $\frac{7}{8}$in. wide,	9d. ,,
1203	2ft. Ditto ditto with Stop Joint ...$\frac{3}{4}$in. wide, 9d., $\frac{7}{8}$in. wide,	1/- ,,

For a large variety of better quality Steel Rules, Straight-edges, and Contraction Rules, *see* Engineers' Section.

Tape-measures—Linen, Metallic, & Steel; also Land Chains.

Linen Measuring Tape.

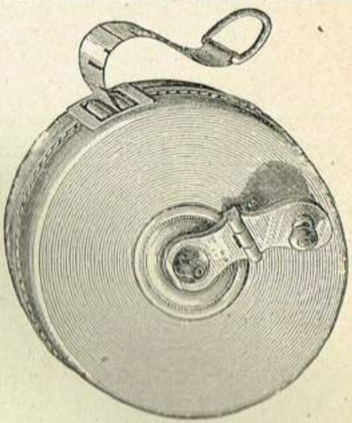


1204

Linen Tape, $\frac{9}{16}$in. wide, Leather Case, with Folding Handle.

33ft., 3/-, 66ft., 4/- each.

Special Metallic Tape.

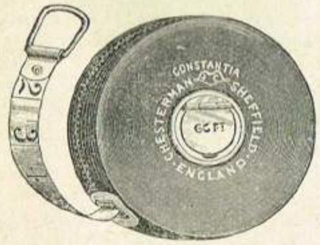


1205

$\frac{5}{8}$in. Metallic Tape, with Rollers and Folding Handle, Leather Case.

33	50	66	100ft.
4/-	5/3	6/6	8/6 each.

Flush Handle Constantia and Metallic Tapes.

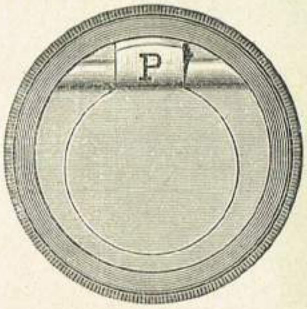


1206

These Tapes are the most accurate and reliable on the market, except only the Steel Tapes. They are fitted with the Improved Flush Handle, as illustration.

33	50	66	100ft.
6/-	7/-	8/6	11/6 each.

Patent Flush Handle.



To open the handle, press upon the part marked P in above illustration. This handle is a great improvement over the old style pattern, as it can easily be opened by pressure from the ball of the thumb, even when wearing thick gloves.

Flush Handle Steel Tapes.

1208

Best Quality Steel Tapes, with Patent Flush Handles, as illustration, and Leather Cases, marked feet and inches on one side and links on back.

Tapes	33	50	66	100ft.
$\frac{1}{2}$in. wide	16/6	22/6	28/6	39/6

Patent Spring Measures.

Spring Steel Tapes in German Silver Cases.

		3	4	6	9	12ft.
1209	¼in. Tape, in German Silver Case, Medium Quality	2/-	2/6	3/-	—	— each.
1210	¼in. Ditto ditto Spring Stop, Best Quality...	3/-	3/6	4/6	6/-	7/6 „
1211	⅜in. Ditto ditto ditto ditto ...	3/6	4/-	5/-	—	— „

Chesterman's Steel Tapes

For Measuring Diameters and Circumferences.

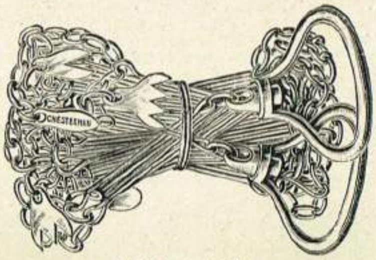
1212 This Measure is for use in ascertaining the Diameter and Circumference of circular objects, and may be used to obtain the Diameter when the Circumference only can be measured, or to obtain the Circumference when only the Diameter can be measured.

It is made as a Spring Pocket Measure in German Silver Case, with Spring Stop. No. 285 at following prices:

6	9	12	18ft.
4/6	6/-	7/6	10/6 each.

(The 6ft. is made ¼in. wide, other lengths $\frac{5}{16}$in. wide.)

Chesterman's Land Chains.



(¼ Size.)

1213 & 1214

The 2 and 4 Pole Chains are divided into Links, and tallied at every Ten Links.
The 50ft. and 100ft. Chains are divided into feet, and tallied at every 10ft.

1213 Made of Best Iron Wire, with Three Oval Rings, Brass Swivel Handles and Tallies.

		2 poles.	4 poles.	50ft.	100ft.
No. 62	No. 8 W.G.	5/- ...	7/6 ...	5/6 ...	8/6 each.

1214 Made of Best Cast Steel Wire, Hardened, Tempered, and Black Enamelled, with Three Oval Rings, Brass Swivel Handles and Tallies.

		2 poles.	4 poles.	50ft.	100ft.
No. 258	No. 8 W.G.	8/6 ...	15/- ...	10/- ...	18/- each.

Chains in all Foreign Measurements to order.

Land Chain Straps.

The above Prices include Straps to the Steel Chains.—For Iron Chains the Price is 3/6 per doz.

Land Chain Arrows.

15in. long, in Sets of Ten.

1215 Made of Best Cast Steel Wire, Hardened, Tempered, and Black Enamelled.
No. 259. Best No. 8 Steel Wire ... ... 1/6 per Set.

CAUTION.—Whereas many Ironmongers are in the habit of offering to supply Tools at "NURSE & CO.'S" prices, but supplying articles that never came from us, we would particularly request that all orders be sent to us *direct*, when they will receive our most careful and prompt attention, and customers can rely upon receiving goods of the highest possible quality only.

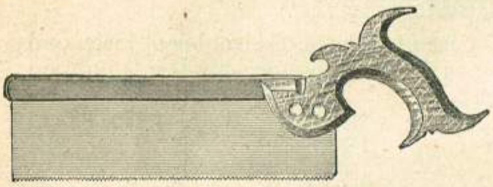
Saws—Warranted.

Being the Very Best Sheffield-made Blades, and bearing our well-known "Invicta" Trade Mark

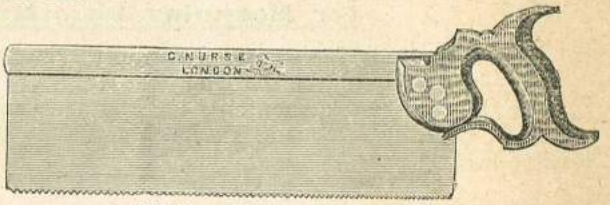
1216 to 1218

		16	18	20	22	24	26	28in.
1216	Panel Saws with 7, 8, 9 or 10 teeth to inch	3/-	3/3	3/9	4/-	4/6	5/-	—
1217	Hand Saws with 5, 5½, 6 or 6½ teeth to inch	—	3/3	3/9	4/-	4/6	5/-	—
1218	Half Rip Saws with 4 teeth to inch, or Rip Saws with 3 or 3½ teeth to inch					—	—	6/6

Back Saws.



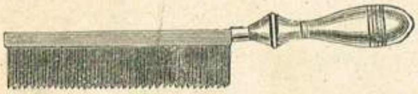
1219 to 1221 (to 10in.)



1219 to 1221 (12in. and over).

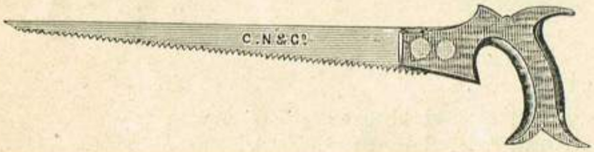
	Tenon or Dovetail	8	9	10	12	14	16in.
1219	Brass Back	5/-	5/3	5/6	6/-	6/6	7/6
1220	Iron Back	3/9	4/-	4/3	4/6	5/-	5/6
1221	Iron Back, Medium Quality	3/-	3/3	3/6	3/9	4/-	4/6

Hardwood Handled Light Brass Back Saws.



	4	5	6	7	8in.
1222	1/-	1/-	1/3	1/6	1/9 each.

Compass Saws.



	12	14	16	18in.
1223	1/3	1/4	1/6	1/8 each.

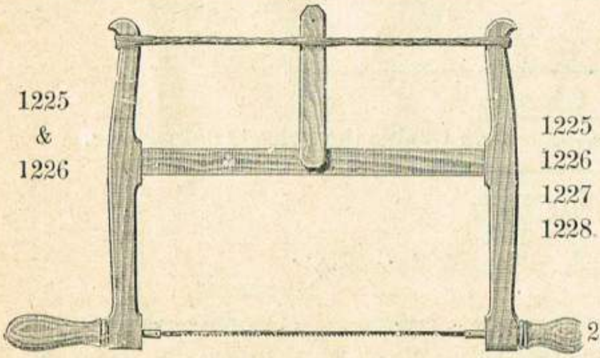
Pad Saw Blades.

1224
To 11in. 4d., 12in. 5d., 13in. 6d. each

For Pad Saw Handles see page 65.

Bow Saws and Frames.

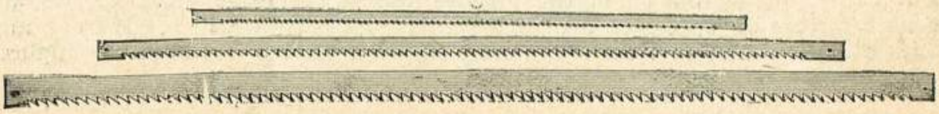
1225
&
1226



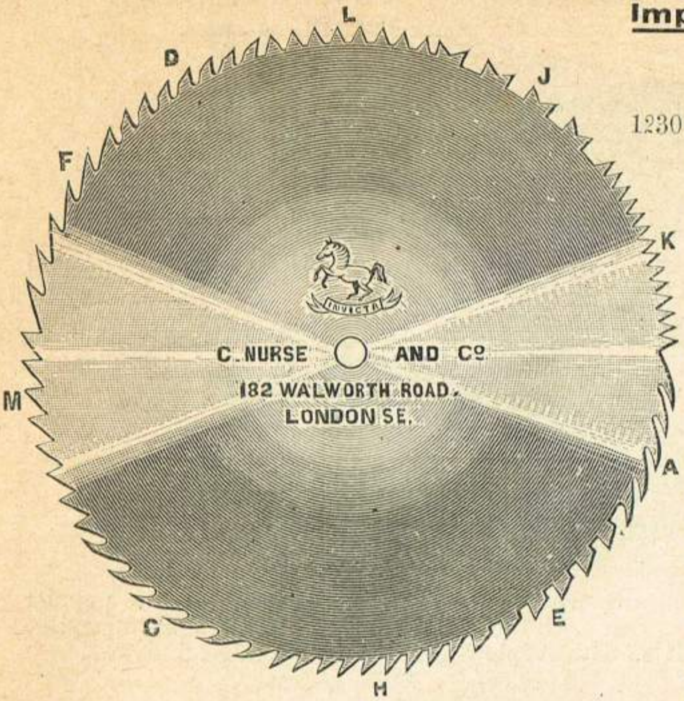
		10	12	14	16in.
1225	Beech Handled	3/3	3/6	4/-	4/6 each
1226	Boxwood Handled	3/6	3/9	4/3	4/9 ,,
1227	Octagon Box Handled	4/-	4/3	4/9	5/3 ,,
1228	Blades for same	4d.	4d.	5d.	6d. ,,

For Handles see page 65.

1229 C.S. Turning Webs 18in. 9d., 20in. 11d., 22in. 1/-, 24in. 1/2, 26in. 1/4, 28in. 1/8, 30in. 2/- each.



1228
&
1229



Improved Machine-ground Best Cast Steel Circular Saws.

1230

4	5	6	7	8	10	12	14in.
						17	17 gauge
3/-	3/9	4/6	5/3	6/0	7/6	8/6	9/6 each
16	18	20	22	24	26	28	30in.
16	15	14	14	13	13	12	12 gauge
11/-	13/6	16/6	19/-	22/-	25/6	30/-	34/6 each
32	34	36	42	48	54	60in.	
12	12	11	10	9	7	5 gauge	
40/-	47/6	54/-	82/-	126/-	216/-	306/- each	

If stronger than these gauges will be charged extra.

In ordering Circular Saws, please give the following particulars—

Diameter of Saw.
Diameter of Centre Hole.
Thickness per Stubbs' Wire Gauge.
Shape of Teeth to our Series.
Space or Distance of Teeth, or number of in each saw.
If to cut hard or soft wood.

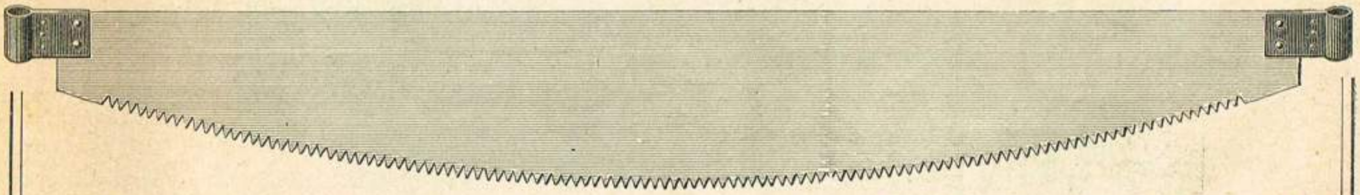
1231 Best Cast Steel Grooving Saws. The Teeth of these Saws are Sawn out, and the Saw Turned thinner to the Centre.

Thickness	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4in.
Price per inch diameter	2/-	2/6	2/9	3/-	3/3	3/6	3/9	4/-	4/3	4/6 per inch.

Pit Saws.

1232 Best Cast Steel Pit Saws, 6ft. by 12in. heel by $\frac{3}{4}$in. space 21/- Ditto, 6ft. 6in. by 12in. heel by $\frac{3}{4}$in. space 22/6 each.

Stone Saws.

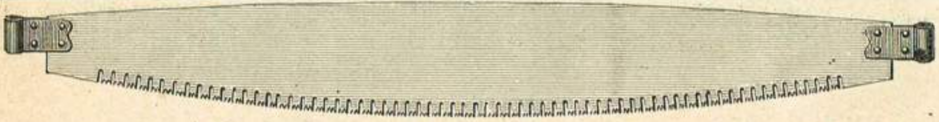


1233 Best Cast Steel Stone Saws, 10in. wide, 5ft. 20/-, 5ft. 6in. 21/6, 6ft. 23/-, 6ft. 6in. 25/6. If exceeding 10in. wide, 2/- per inch extra.

1234 Best Turned Ash Handles for same, 1/6 per pair.

Cross-cut Saws.

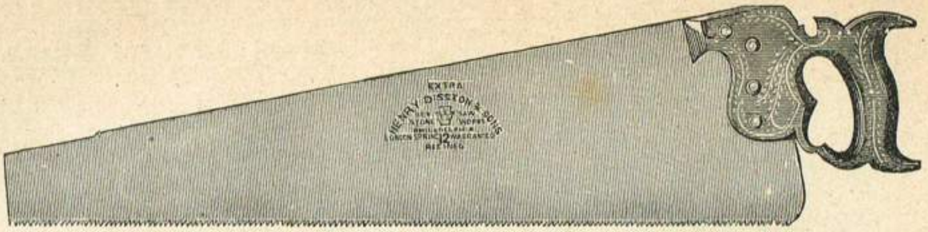
1235 Best Cast Steel Cross-cut Saws, 4ft. 8/6, 4ft. 6in. 10/-, 5ft. 11/6, 5ft. 6in. 12/6 each.



1236 Ditto with Lightning Tooth, 4ft. 8/6, 4ft. 6in. 10/-, 5ft. 11/6, 5ft. 6in. 12/6 each.

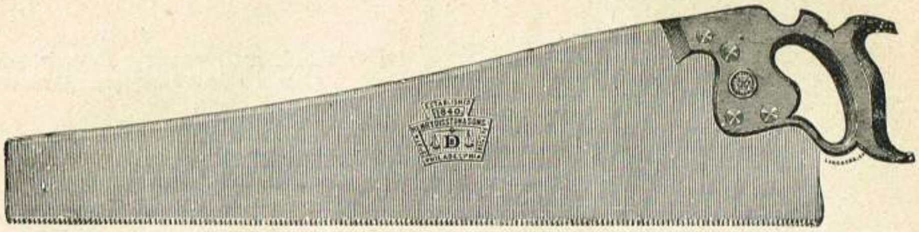
1237 Best Turned Ash Handles for same, 9d. per pair.

Henry Disston & Son's Celebrated American Saws.



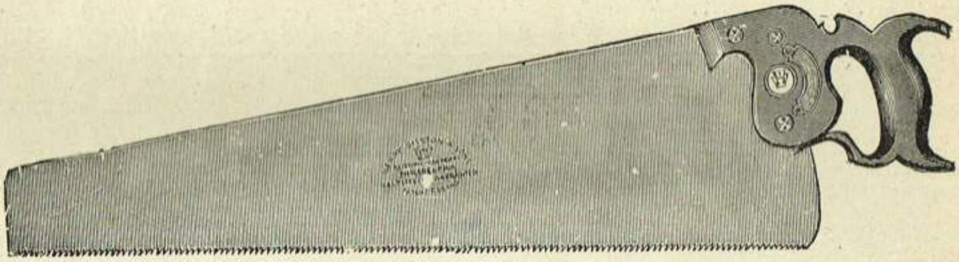
1238 No. 12. Extra Refined London Spring Steel, Highly Polished Blade, Handle Carved and Polished, 4 Improved Screws. The finest Hand Saw that is manufactured.

20in., 6/- 22in., 6/6 24in., 7/- 26in., 7/6 28in., 8/6 each.



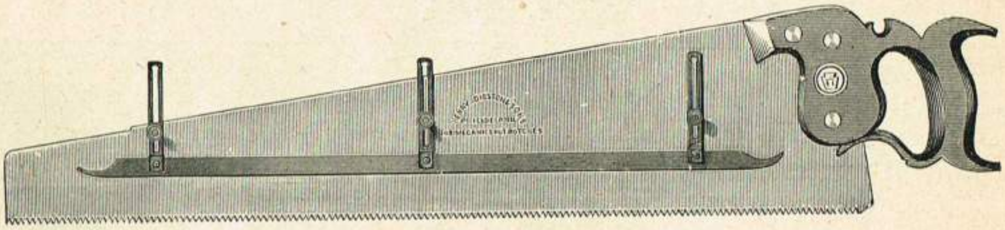
1239 No. D8. This Saw has all the latest improvements in Hand Saws, and combines the popular "Skew-back," the peculiar shaped Butt or Heel, which, with the new screws, makes it almost impossible to work loose from the Handle. No. D8, Skew Back Saw, Apple Handle, Polished Edge, 5 Screws.

20in., 4/9 22in., 5/3 24in., 5/9 26in., 6/- 28in., 7/- each.



1240 No. 8. Best Quality Hand Saw, similar in quality and finish to the favourite pattern D8, but made with a straight back in place of the Skew Back.

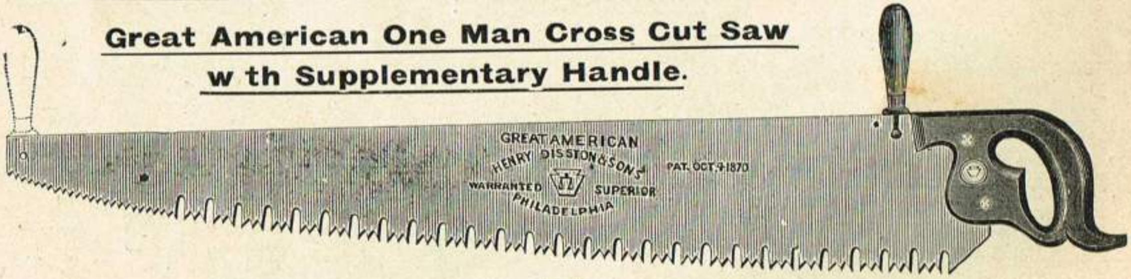
20in., 4/6 22in., 5/- 24in., 5/6 26in., 5/9 28in., 6/6 each.



1241 Improved "Gauge" Saw. Specially adapted to tenoning, shouldering, dovetailing, curving, or any purpose where a definite depth of cut is required. Made in one size only, 26in.

Price 7/6 each. (When NOT required, Gauge can be removed.)

Great American One Man Cross Cut Saw with Supplementary Handle.

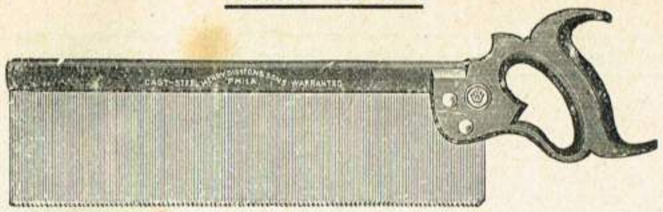


1242.

3ft.	3ft. 6in.	4ft.	4ft. 6in.
7/3	8/-	9/6	10/6 each.

Henry Disston & Sons' Saws.

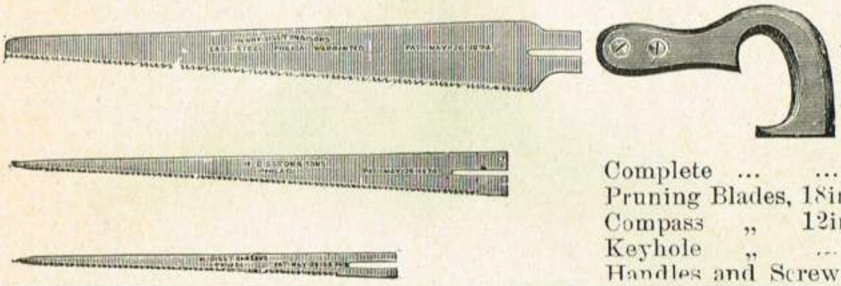
Back Saws.


CAST-STEEL HENRY DISSTON & SONS WARRANTED PHILA.

1243 & 1244

		Sizes	8	10	12	14	16in.
1243	No. 4.	Disston's Blue Steel Back	3/6	3/9	4/3	5/-	5/9 each.
1244	No. 5.	„ Brass Back	5/-	5/3	5/9	6/6	7/3 „

Nest of Saws.



1245 The Nest combines one each—Keyhole, Compass, and Table or Pruning Saw.

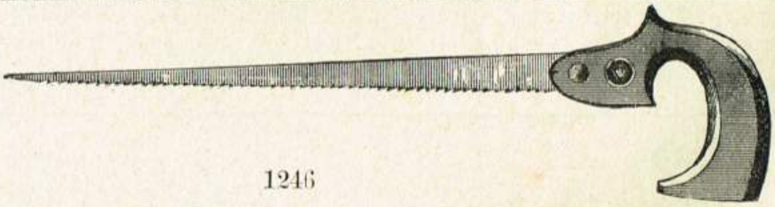
PRICES—

Complete	3/- per set.
Pruning Blades, 18in. long	1/4 each.
Compass „ 12in. „	9d. „
Keyhole „	6d. „
Handles and Screws	8d. „

Cast Steel Compass Saws.

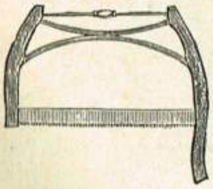
Apple Handle.

Sizes ...	12	14	16	18in.
Prices ...	1/3	1/4	1/6	1/8 each.



1246

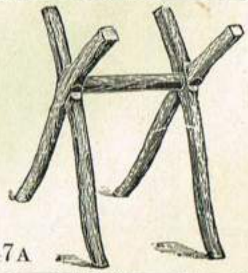
Disston's Woodcutters' Saws and Saw Bucks.



1247

1247 Disston's Arched Frame Wood Saws complete, 3/6 each.

1247A Disston's Wood Saw Bucks, 1/6 each.



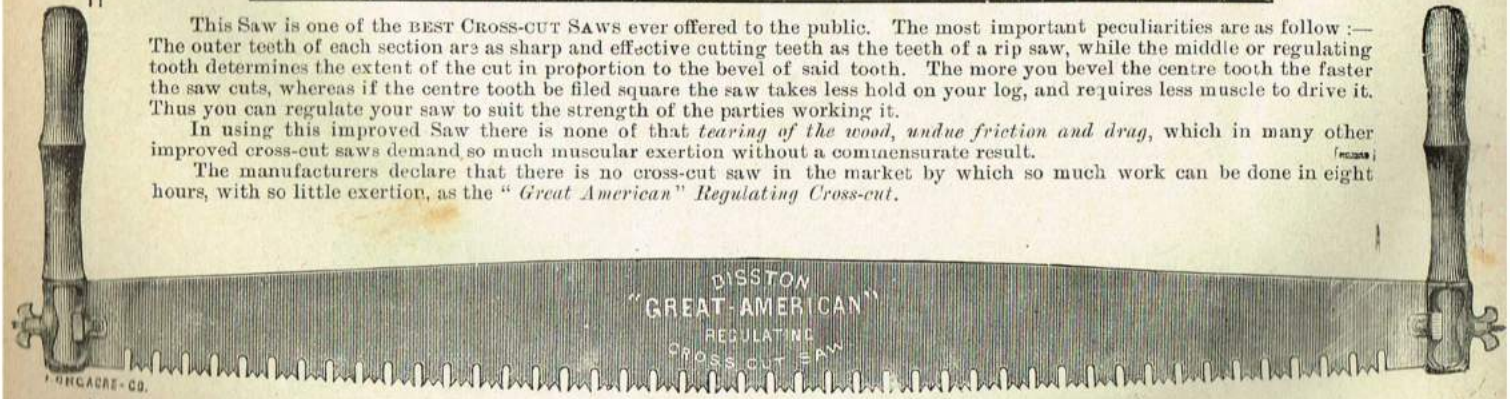
1247A

"Great American" Cross-cut Saws with Climax Handles.

This Saw is one of the BEST CROSS-CUT SAWS ever offered to the public. The most important peculiarities are as follow :—The outer teeth of each section are as sharp and effective cutting teeth as the teeth of a rip saw, while the middle or regulating tooth determines the extent of the cut in proportion to the bevel of said tooth. The more you bevel the centre tooth the faster the saw cuts, whereas if the centre tooth be filed square the saw takes less hold on your log, and requires less muscle to drive it. Thus you can regulate your saw to suit the strength of the parties working it.

In using this improved Saw there is none of that *tearing of the wood, undue friction and drag*, which in many other improved cross-cut saws demand so much muscular exertion without a commensurate result.

The manufacturers declare that there is no cross-cut saw in the market by which so much work can be done in eight hours, with so little exertion, as the "*Great American*" *Regulating Cross-cut*.



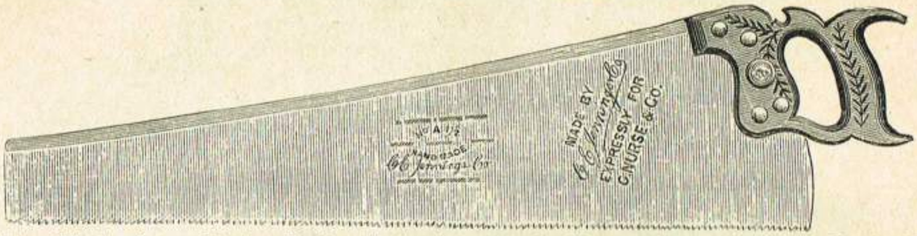
PRICES—

			4	4½	5	5½	6ft.
1248	"Great American" Saws, with Climax Handles	...	9/6	10/6	11/6	12/6	13/6 each.

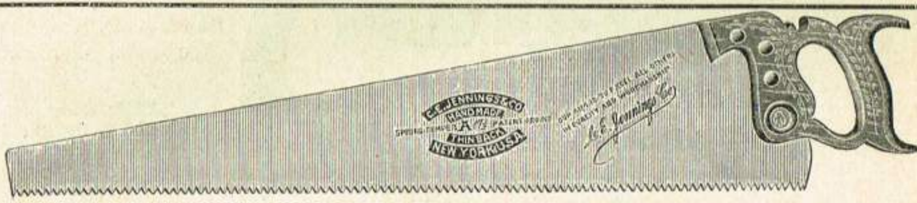
C. E. Jennings & Co.'s Saws.

All Saws made by C. E. Jennings and Co. are Patent Ground, and Tempered, Hand-Hammered, and Hand-Filed, and set ready for use. They are fully warranted by us, and we have every confidence in recommending them to our Customers.

Hollow Back, Damascus Blade. Fully Warranted.

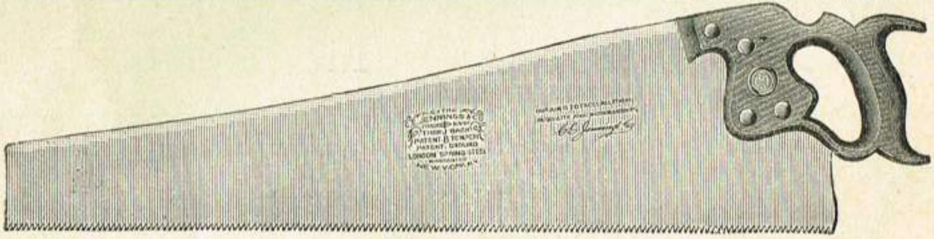

MADE BY
C.E. Jennings & Co.
EXPRESSLY FOR
C. NURSE & CO.

1249 No. A1½. Made from Extra Refined Spring Steel, Taper Ground, Thin Back, Full Polished Blades, Carved and Polished Apple Handles. The 26in. and 28in. Saws have 5 Screws; smaller sizes, 4 Screws. 20in., 6/6; 22in., 7/-; 24in., 7/6; 26in., 8/-; 28in., 9/- each.



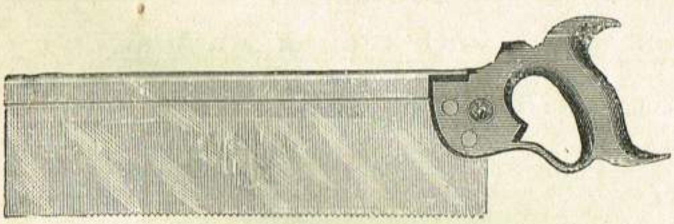
THE ACME OF PERFECTION.

1250 No. A7½. This Saw is made on new lines, 6in. wide at butt, 1½in. at point. A Saw that has been worn down by constant use becomes invaluable to the owner, as it can be used for many purposes where a full-width Saw is unwieldy. They are made of the best refined spring steel, ground four gauges thinner on back, full bevelled, filed and set, carved and polished handle, with four improved brass screws. 22in., 6/-; 24in., 6/6; 26in., 7/-; 28in., 8/- each.



1251 No. J8. Made from Best Refined Spring Steel, Taper Ground, Thin Back, Selected Blades, Apple Handles, Skew Back. The 28in. has five screws; smaller sizes, four screws. 22in., 5/6; 24in., 6/-; 26in., 6/6; 28in., 7/6 each.

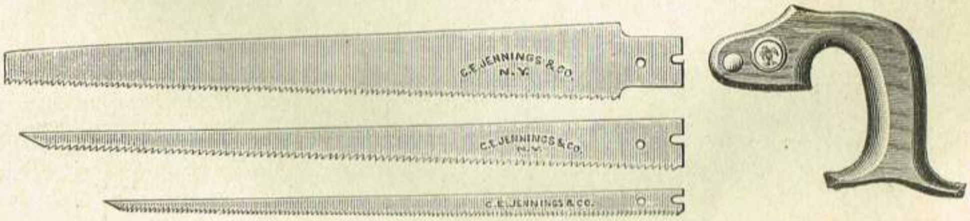
C. E. Jennings & Co.'s Back Saws.



Made from Extra Spring Steel, with heavy backs. Hand-filed, ready for use, and fully warranted.

1252 No. 35½. Apple Handles, Polished Edges, Blued Steel Backs: 8in., 3/9; 10in., 4/-; 12in., 4/6; 14in., 5/- each.

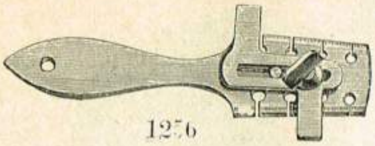
1253 No. 36½ Apple Handles, Polished Edges, Brass Backs: 8in., 5/-; 10in., 5/6; 12in., 6/-; 14in., 6/6 each.


C.E. JENNINGS & CO.
N.Y.
C.E. JENNINGS & CO.
N.Y.
C.E. JENNINGS & CO.

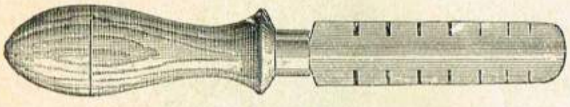
1254 C. E. Jennings and Co.'s Nests of 3 Saws and Handle, 3/3 per set.
1255 C. E. Jennings and Co.'s Apple Handle Compass Saws: 12in., 1/4; 14in., 1/6; 16in., 1/8; 18in., 1/10 each.

Saw Sets.

To ensure satisfactory working all Saws require to be carefully set. As a rule, what complaints we receive of Saws are on account of teeth breaking out in setting, but as every one of our Saws is carefully set before being sent out, these complaints are generally caused either by customers putting on too wide a set or by trying to set the teeth too low down from the point. Whatever Saw Set, therefore, customers may prefer to use, we would venture to make the suggestion—never put any pressure below the centre of the tooth; the plate of the saw will be sure to get strained and buckled if the set is used too low down on the tooth.

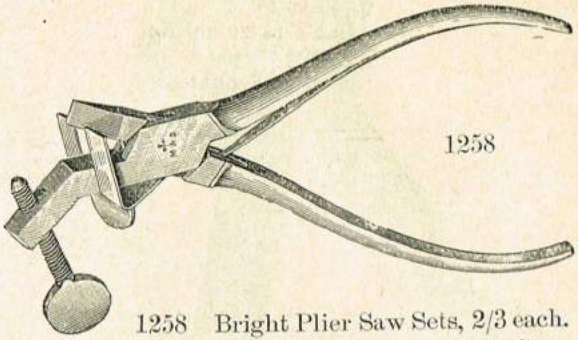


1256



1257 & 1257A

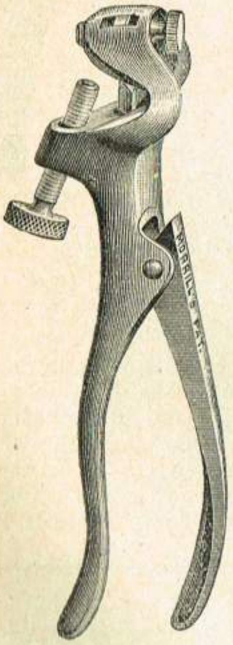
1256 All Steel Saw Sets with Guide, 6d. each.
1257 Beech Handled Saw Sets, 8d. each.
1257A Boxwood Handled ditto, 10d. each.



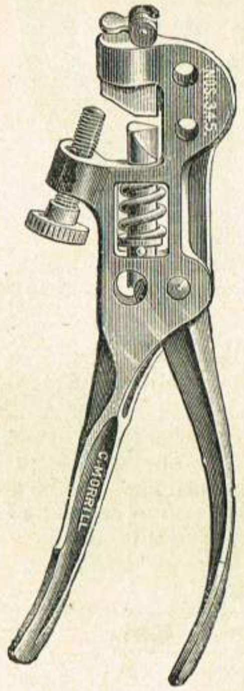
1258

1258 Bright Plier Saw Sets, 2/3 each.
1259 Strong Black Pit or Cross-cut Saw Sets, 6 Gates, 1/6 each.

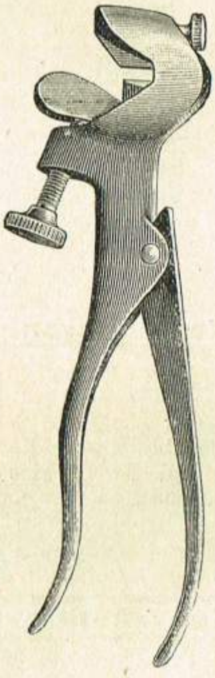
Morrill's Pattern Saw Sets.


MORRILL'S PAT.

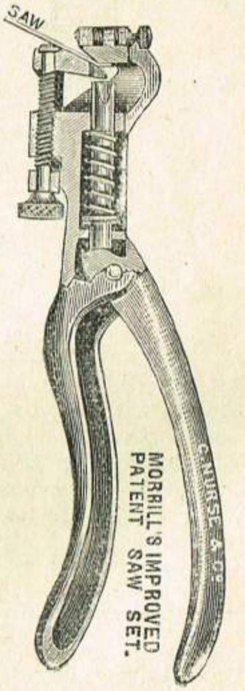
No. 1 Improved



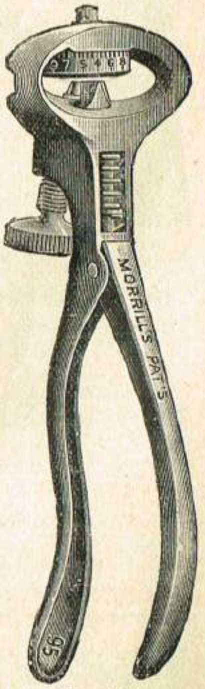
Nos. 3, 4, & 5



No. 10



No. 11



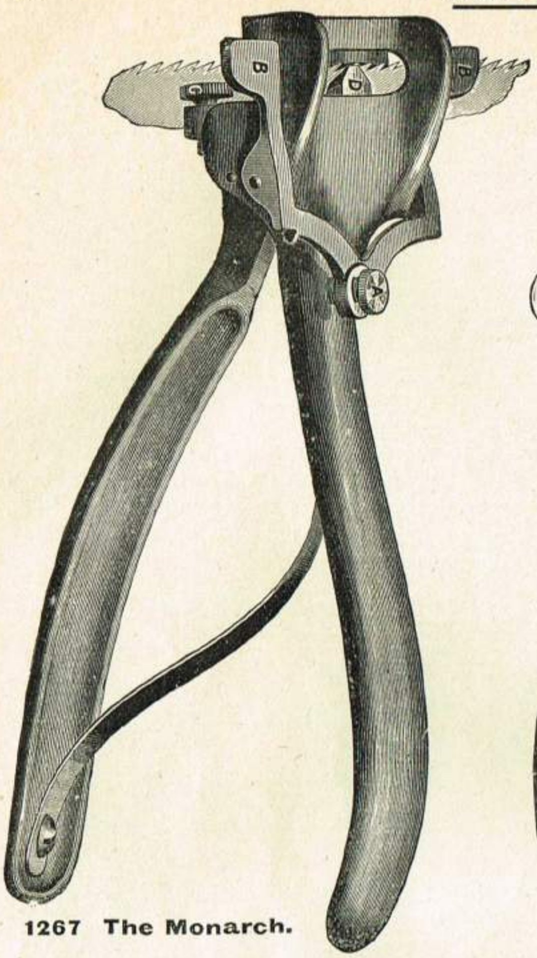
No. 95

1260 No. 1 For Hand, Band, and Jig Saws, from the widest down to ½in., 3/3 each.
1261 No. 3 Cross-cut and Circular, Single Tooth, from 14 to 20 gauge, 6/- each.
1262 No. 4 Cross-cut M and Champion Tooth, from 14 to 20 gauge, 6/- each.
1263 No. 5 For Timber and Board Saws, from 6 to 14 gauge, 8/- each.
1264 No. 10 For Hand, Band, Jig, Scroll, and Fret Saws, from the largest down to ¼in. wide, 3/6 each.
1265 No. 11 Improved New Pattern for Hand, Band, Jig, or Scroll Saws, 3/9 each.
1266 No. 95 Improved Pattern with Bevelled Circular Disc, 3/6 each.

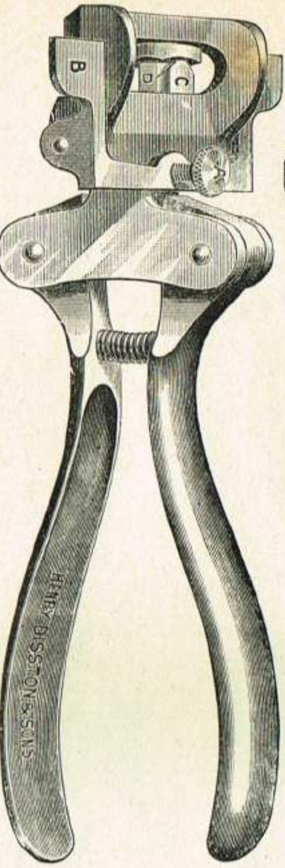
Saw teeth should never be twisted, but set at right angles to their points; the Saw, or Saw Sets, if used in this way, will not break; the operator will readily see the difference in their working qualities when using.

Directions for Use.—Hold the Saw on any level place, teeth upwards. Place the Set on the saw. The anvil is movable up and down, to regulate the distance the user desires to set his saw teeth down from their points. The screw fastens the anvil in any desired position. The Rest Screw, when moved forward, increases the amount of set; when moved backward, decreases it; by compressing the handles the plunger goes forward and takes effect on the tooth of the saw, and presses it into place.

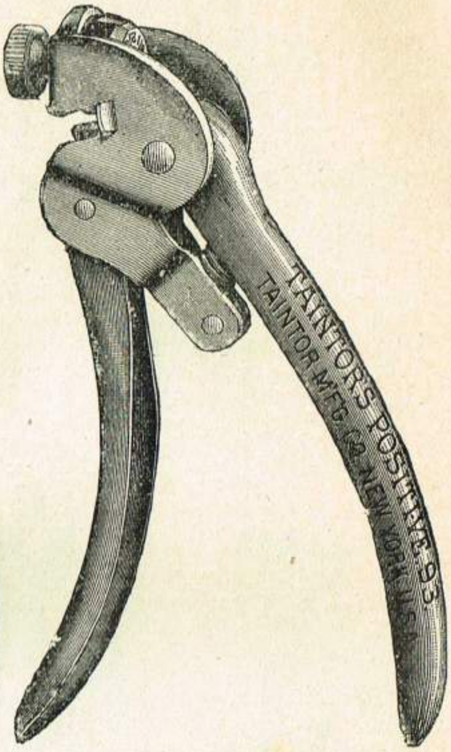
Caution.—Do not exert too much strength, as the set is very powerful.



1267 The Monarch.



1268 The Triumph.



TAINTORS POSITIVE 93
TAINTOR M'F'G CO NEW YORK U.S.A.

1269 The Taintor.

Disston's Monarch Saw Set.

1267 This Saw Set differs in construction and principle from any Set yet offered. The die is rounded, fitted to the Set with a screw, and finished with four bevelled edges of different depths, suitable for adjustment to set teeth of varying sizes. In cases where large teeth are to be set the die must be adjusted to allow the edge having the deepest bevel to be used. In operating adjust first the die, bringing into use the edge having the bevel most suitable for the size of tooth about to be set; then hang it on the saw so that the guide B rests on the teeth, adjust by screw A the depth of set to be given, being careful not to go too deeply into the tooth, but adjust so that the top of plunger D is in line with top of tooth. Next regulate set screw C for amount of set required, using care in this particular not to put more set than is absolutely needful. Price, Japanned, **2/6** each; Polished, **3/6** each.

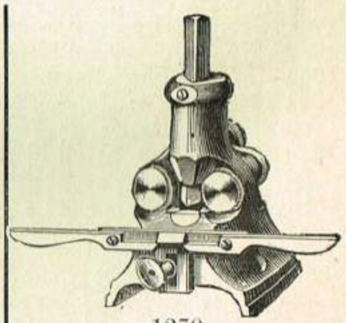
Disston's Triumph Saw Set.

1268 The principal improvement in the Triumph Saw Set consists in the introduction of two plungers in place of one only, the lower plunger holding the saw rigidly in position, whilst the upper plunger sets the teeth of the saw. Price, **4/-** each.

The Taintor Positive Saw Set.

1269 The Taintor Positive Saw Set consists of a frame to which are attached two movable handles, an anvil, and punch. A spring holds the handles apart. In use the upper handle clamps the saw against the side (lower part) of the anvil. The lower handle carries the punch which forces the tooth against the face of the anvil. The difference of angle between the face and side of the anvil determines the set of the tooth. The faces of the anvil are numbered, so that any setting may be repeated.

The Anvil is a block of Steel having ten sides and faces, which are numbered. The faces are of three lengths placed in lettered divisions—F for fine, M for medium, and C for coarse teeth. These faces will produce any setting ordinarily required, but for fine adjustment a washer is provided, which, when placed between the anvil and frame, causes each face to bend the tooth nearer its point, producing less set. Twenty adjustments are thus obtained. Price, **3/-** each.

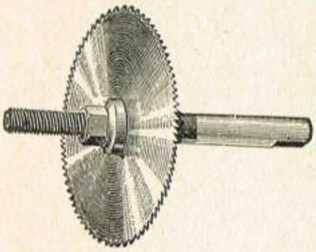


1270

Preston's Patent Bronzed Punch Saw Set, 4/6 each.

Saw Spindles.

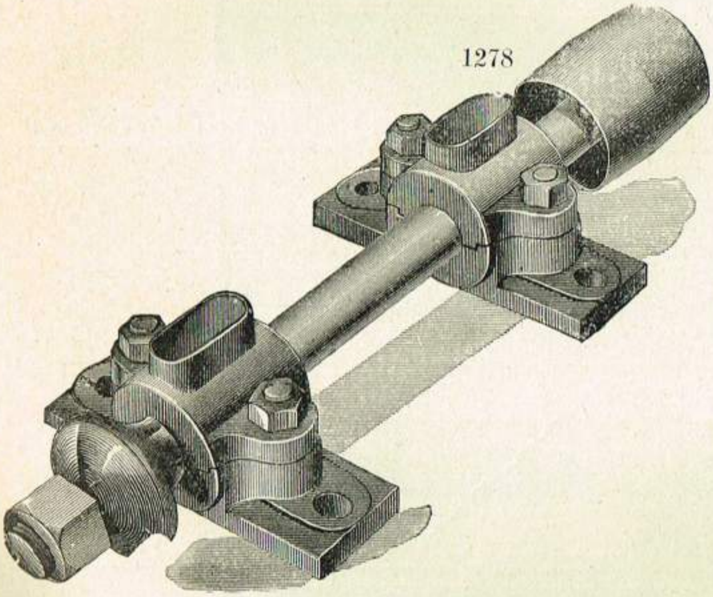
Improved Lathe Spindles with Best Quality Circular Saws and Emery Wheels.



	No. *Length.* *Diameter.*	*Best Quality.*	*Width.* *Thickness.*
1271	1—Spindle, 5 by $\frac{5}{16}$in. 1/9 each.	Circular Saw, 3in. 2/3 each.	Emery Wheel, 3 by $\frac{1}{2}$in. 1/8 each.
1272	2—Ditto 5 by $\frac{3}{8}$in. 2/3 each.	Ditto 4in. 3/- each.	Ditto 4 by $\frac{3}{4}$in. 2/10 each.
1273	3—Ditto 6 by $\frac{1}{2}$in. 2/9 each.	Ditto 5in. 3/9 each.	Ditto 6 by $\frac{3}{4}$in. 5/- each.
1274	4—Ditto 7 by $\frac{5}{8}$in. 3/9 each.	Ditto 6in. 4/6 each.	Ditto 7 by $\frac{3}{4}$in. 6/- each,
1275	5—Ditto 8 by $\frac{3}{4}$in. 5/- each.	Ditto 8in. 6/- each.	Ditto 8 by $\frac{3}{4}$in. 7/6 each.
1276	6—Ditto 10 by $\frac{7}{8}$in. 7/- each.	Ditto 10in. 7/6 each.	Ditto 10 by 1in. 13/3 each.
1277	7—Ditto 12 by 1in. 10/- each.	Ditto 12in. 8/6 each.	Ditto 12 by 1in. 15/6 each.

The Saws and Emery Wheels have Centre Holes to suit the Spindles opposite which they are placed. Above will suit any ordinary lathe, and, being good and substantial tools, will be useful for either Mechanics or Amateurs.

1278



Circular Saw Spindles.

1278 Circular Saw Spindles, complete with Bearings and Collars, and with Fast Pulley.

1	1$\frac{1}{8}$	1$\frac{1}{4}$in.
20/-	25/-	35/- each.

Carriage Forward.

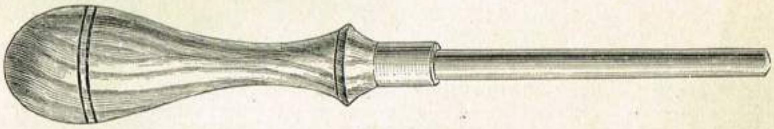
1279 Circular Saw Spindles, complete with Brass-bushed Bearings, Collars, and with Fast and Loose Pulleys.

1	1$\frac{1}{8}$	1$\frac{1}{4}$	1$\frac{3}{8}$	1$\frac{1}{2}$	2in.
37/6	42/6	47/6	52/6	60/-	85/- each.

Carriage Forward.

Scraper Blades and Sharpeners.

1280



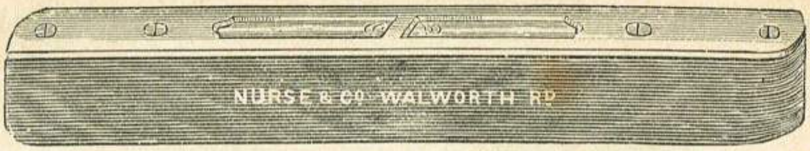
1281

1280 Best Steel Scraper Blades, 4in. 4d., 5in. 4$\frac{1}{2}$d., 6in. 5d. each.
1281 Handled Steels for Sharpening Ditto, 6d. each.

Screw Boxes and Taps and Wheelers' Rounders.

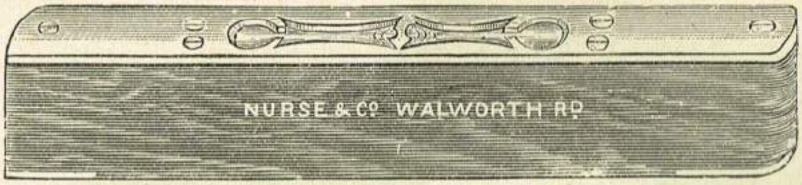
		$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1$\frac{1}{8}$	1$\frac{1}{4}$	1$\frac{1}{2}$in.
1282	Best English made, with Solid Taps	3/9	4/-	4/6	5/-	5/6	6/-	6/6	7/6 each.
1283	German made, Ditto	2/3	2/6	3/-	3/6	4/-	4/6	5/-	— ,,
1284	Wheelers' Rounders	—	5/-	5/6	6/-	6/6	7/-	7/6	8/6 ,,

Spirit Levels.



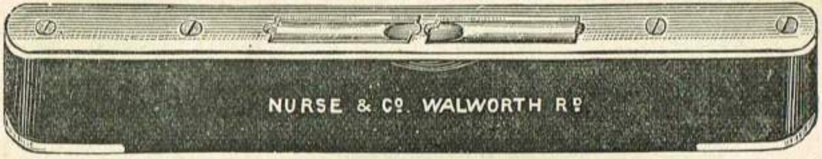
1285

1285 Walnut, Brass-plated Top ... ... 4in., 5d. ; 6in., 7d. ; 8in., 9d. each.
1286 Walnut, Brass-plated Top, Tipped Bottom ... ... 6in, 1/- ; 8in., 1/3 ; 10in., 1/6 ,,

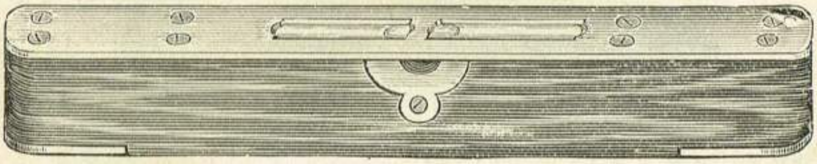


1287

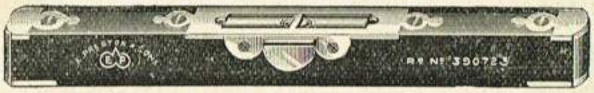
1287 Walnut, Fancy Brass-plated Top, Tipped Bottom... 6in., 1/6 ; 8in., 2/- ; 10in., 2/3 ; 12in, 2/6 each.
1288 Ditto, with Brass Plate full length on bottom ... ... 8in., 2/6 ; 10in., 3/- ; 12in., 3/6 ,,



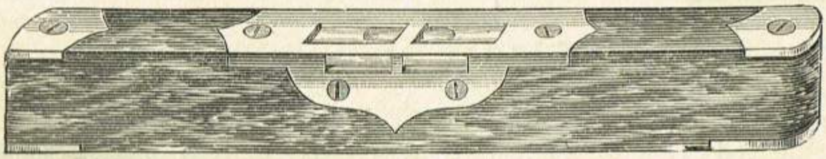
1289 Ebony, Plated Top, Tipped Bottom ; a very cheap Level ... 6in., 1/6 ; 8in., 2/- ; 10in., 2/3 each.



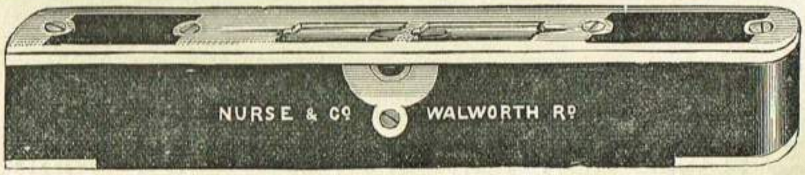
1290 Rosewood, Tipped Bottom, Brass Side Views ... 8in., 2/- ; 9in., 2/3 ; 10in., 2/6 ; 12in., 3/- each.



1291 Ebony Tipped Bottom, Brass Side Views ... ... 10in., 2/9 each.

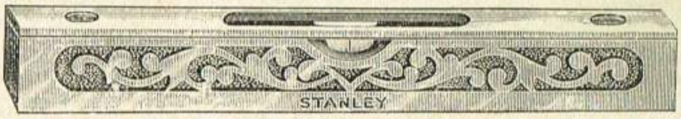


1292 Rosewood, Ornamental Plated Top, Tipped Bottom, Brass Side Views, 8in., 3/- ; 9in., 3/3 ; 10in., 3/6 each.

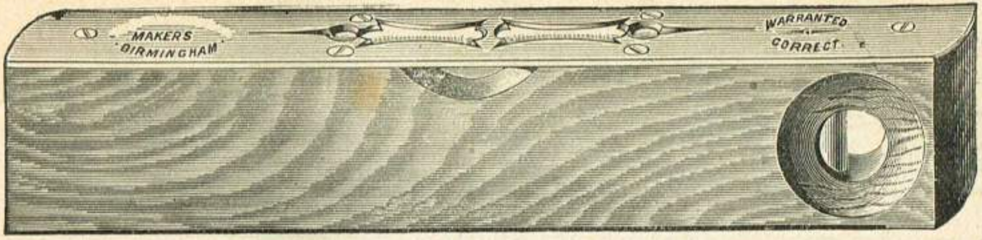


1293

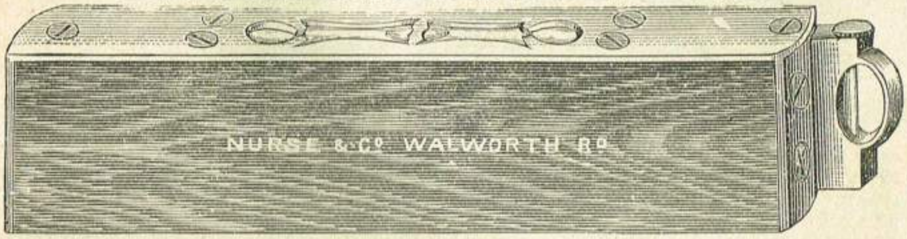
1293 Ebony, Ornamental Plated Top, Tipped Bottom, Brass Side Views. 8in., 2/6 ; 9in., 3/- ; 10in., 3/3 ; 12in., 4/- each.
1294 Ditto, ditto, with Brass Slides to protect Tube ... ... 8in., 3/3 ; 9in., 3/9 ; 10in., 4/- each.



1295 Stanley's Nickel-plated Iron Framed Levels ... ... 4in., 1/6 ; 6in., 2/- each.



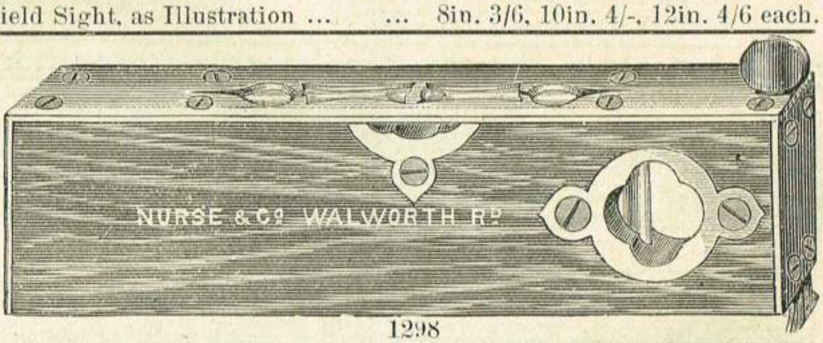
1296 Walnut Brass-plated Plumb and Spirit Levels, with Tipped Bottoms, 8in. 2/3, 10in. 2/9, 12in. 3/3 each.



1297 Best Improved ditto, with Field Sight, as Illustration ... ... 8in. 3/6, 10in. 4/-, 12in. 4/6 each.

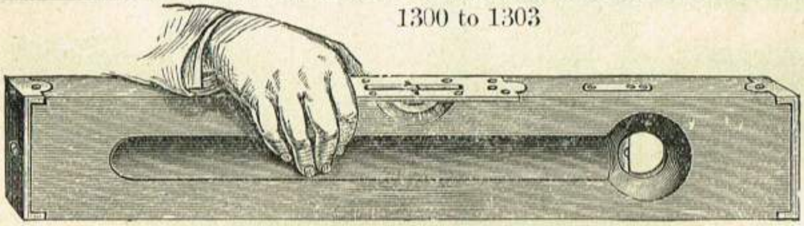
1298 12in. Best Fancy Brass-plated Plumb and Level, with graduated Screw Slide to show fall per foot ... . 7/- each.

1299 Ditto, ditto, with field sight on Top ... ... 9/6 each.



1298

1300 to 1303

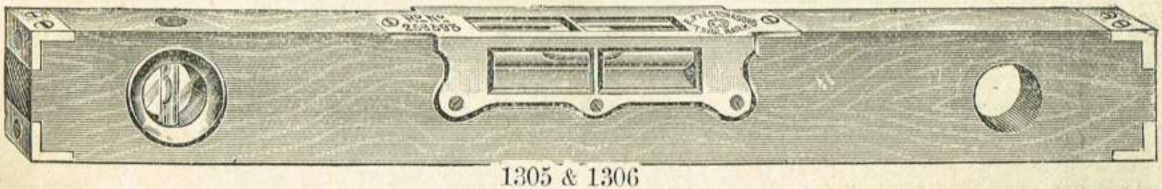


Patent Improved Adjustable Plumb and Spirit Levels.

1300	Brass Arch Top Plate, Brass Tipped	24in. 5/-,	30in. 6/-	each.
1301	Ditto ditto ditto Side Views	24in. 5/6,	30in. 6/6	,,
1302	Ditto ditto ditto Mahogany Stock	24in. 6/6,	30in. 7/6	,,
1303	Ditto ditto with Mahogany Triple Stock	24in. 7/6,	30in. 9/-	,,

We are now making these Levels with Side Grooves, affording a better grip on the Tool.

Improved Registered Spirit Level.



1305 & 1306

The Bubble Tube is set in the centre of a Brass Frame, which has Glass at the top and sides, with very large openings for the top and side views, thus enabling the user to see the Bubble very plainly, and from a distance. The large side views are especially useful when testing over-head work. The Level is proved or tested on the top as well as on the base, so that it can be used for testing over-head work from the top of the Level in places where it is not possible to place the Level on its base. It can also be used as a Plumb Level. Builders, Plasterers, Carpenters, Joiners, Engineers, etc., will find this Level of very great service.

1304	15in. or 18in. long, French polished	6/- each.
1305	Ditto ditto and Tipped Top and Bottom Corners	6/6 ,,
1306	Ditto ditto Best Ebony Stocks, Tipped Top and Bottom Corners	9/- ,,
1307	Ditto ditto Strong Leather Cases to hold above Levels	3/6 ,,

Spirit Levels—*continued.*

1308

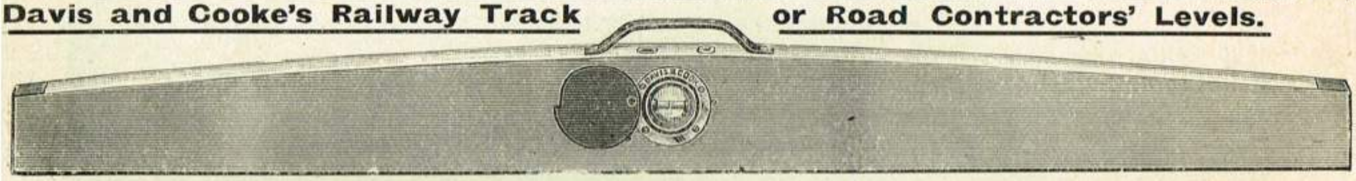
1308 Mason's Tapered Rosewood Levels, 6in. 1/3, 9in. 1/6, 12in. 1/9.
1309 Ditto Plumb and Level, 6in. 1/6, 9in. 1/9, 12in. 2/3.
1310 Best Boxwood Rule Marked Plumb and Level, 6in. 1/9, 9in. 2/-, 12in. 2/6.

Stanley's Patent Duplex Plumbs and Levels.

These Levels have the ordinary form of levelling glass set in the top surface of the stock. For any uses where an observation of the glass sideways may be found convenient, an additional levelling glass is set in the side, at the opposite end from the Plumb. Both glasses are protected by Brass Discs, can be seen from either side, and are inserted in the Level with the least possible removal of wood from the Stock.

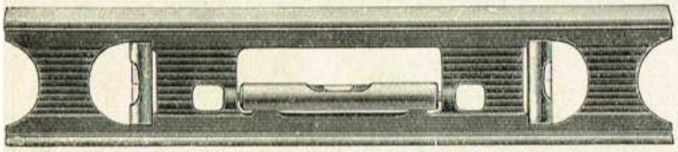
1311 No. 25 Patent Adjustable Plumb and Level, Mahogany, Arch Top Plate, Improved Duplex Side Views, Polished, Tipped, 24in. 7/6, 30in. 8/6 each.

Davis and Cooke's Railway Track or Road Contractors' Levels.

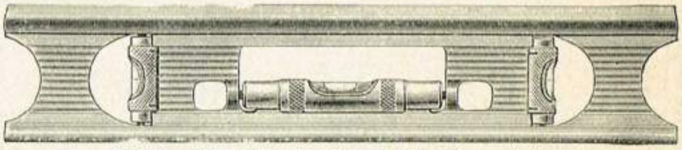


1312 60in., 11/- each.

Metallic Plumbs and Levels.



1313. No. 36s Style of 12, 18, and 24in.



1314 No. 37s Style of 12, 18, and 24in.

Both the Plumb and Level Glasses are set in a metal case. The bottom of each case is machined so as to fit accurately on supports cast in the frame of the Level. The case is held firmly on the supports by means of cone centres which engage each end of the case. The centre lines of the case and the cones are eccentric. The metal case is readily removed from the frame by slackening the cone centres. It is possible to adjust these Levels or to accurately insert new glasses by placing paper between the case and its supports. These levels are now being made in such quantities that they are offered for sale at a price making them available to all.

1313 No. 36s. Japanned, Nickel-plated Trimmings, with Proved Glasses, Two Plumbs, 12in. 5/-, 18in. 6/-, 24in. 7/- each.

1314 No. 37s. This Level is of the same general design as the No. 36s described above, but has certain improved features, the special features being that it is fitted with Ground Glasses; the Glasses are protected by Eclipse Cases, and the Level is Nickel-plated throughout; 12in. 10/-, 18in. 12/-, 24in. 14/- each.

Engineers' and Plumbers' Levels.

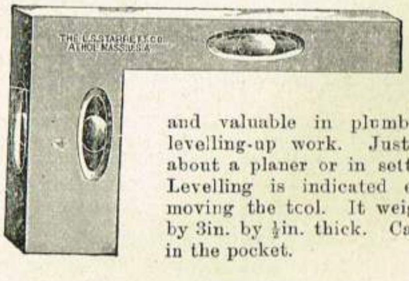
1315 133s.

THE L. S. STARRETT CO. ATHOL, MASS. U.S.A.

The above represents an adjustable incline Level, a Fixed Level, and a Plumb. The hinged tube inside the working faces of the frame, carrying a level glass, is adjustable to the graduated scale, and shows any incline by 32ds (or less) to 2in. to the foot without interfering in the least with the Plumb or Level. A longitudinal groove in seat of frame (not shown in cut) adapts it to rest on a cylindrical shaft or pipe as well as on flat surfaces, making it convenient to determine the pitch of drain pipes, &c. These instruments are supplied with either ground or plain glasses.

10in., with plain glasses, 11/6; with ground glasses, 24/- each.
15in. " " " 12/6; " " " 25/- "

Cross-test Level and Plumb.


THE L. S. STARRETT CO. ATHOL, MASS. U.S.A.

1316 134s.

This is a well-made and reliable tool, and valuable in plumbing, squaring, and levelling-up work. Just the thing to use about a planer or in setting up machinery. Levelling is indicated every way without moving the tool. It weighs 3oz. Size 2in. by 3in. by ½in. thick. Can be easily carried in the pocket.

Price 6/- each.

Spirit Levels—*continued.*

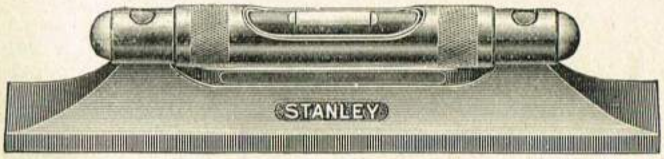
Eclipse Levels.

These Levels are furnished with Ground Glasses. The Glass is fitted in a metal case and the only plaster used is that necessary to fill the ends of the case. An outer shell is fitted over this case, and when the Level is not in use this shell can be turned so as to completely protect the Glass from damage. This shell is termed by us an "Eclipse Case." The Case is screwed on to a substantial metal base. The Level may be adjusted by means of these screws. The case and base are Nickel-plated. They are supplied with **V** Bottoms for Levelling Shafting, &c.

1317 No. 34v.

Nickel-plated with Ground Glass.

4in.	3/6 each
6in.	4/6 „
8in.	6/- „

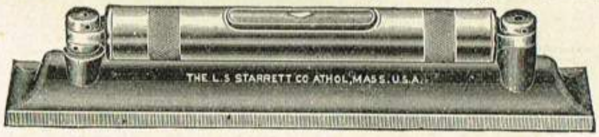


END VIEW.

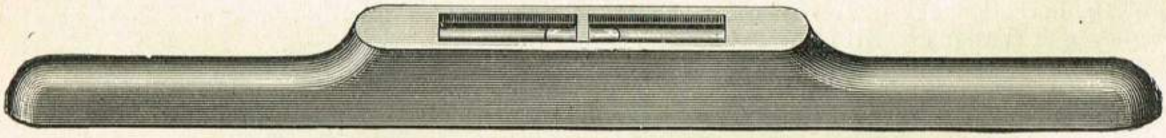
Adjustable Bench Levels.

With Ground and Graduated Vials—accurate and very sensitive.

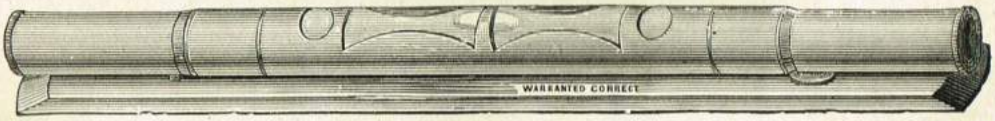
These Levels are so constructed that they can be accurately adjusted, and when so adjusted are not liable to get out of truth, the Vials being set in tubes having solid ends which are firmly clamped to the base. The Tubes are Nickel-plated, the Bases Japanned. The Outer Tube may be turned so as to protect the glass when not in use. The Levels have a longitudinal groove in seat of Frame.


THE L. S. STARRETT CO ATHOL, MASS. U.S.A.

1318 and 1319		95s and 96s	
4in, Plain Vial	4/- each.	4in., with Ground and Graduated Vial	10/- each.
6in., „	5/- „	6in., „ „ „	14/- „
8in., „	6/- „	8in., „ „ „	16/- „

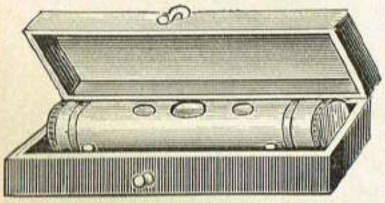


1320 Superior Polished Gun-metal Spirit Level, 6in. 1/6, 9in. 2/6 each.



1321 Brass Adjusting Level with Revolving Tube Protector, and in Case, 5in. 2/-, 6in. 2/6, 7in. 3/-, 8in. 3/6, 9in. 3/9, 10in. 4/- each.

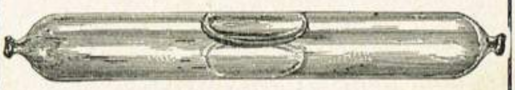
Brass Tube Level on Stand.



1322

In Case, 3in. 1/3, 4in. 1/8 each.

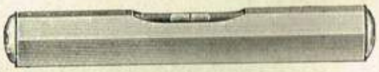
Proved Level Tubes.



1323

To 2½	3	3½	4	5	6in.
2½d.	3d.	3½d.	4d.	5d.	6d. each.

Hexagon Pocket Levels.

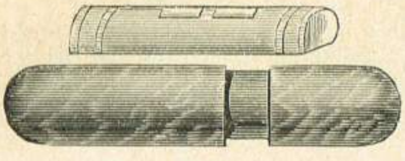


1324

Nickel-plated.

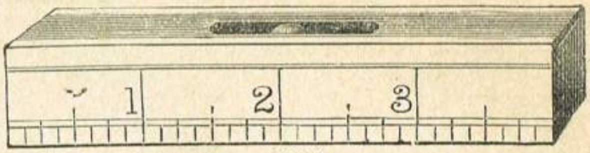
2½	3	4in.
1/3	1/6	2/- each.

Spirit Levels—*continued.*



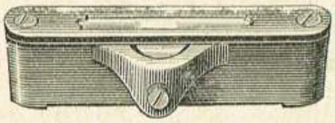
1325

Small Brass Levels in Boxwood Cases, 2½in. 9d., 4in. 1/6 each.



1326

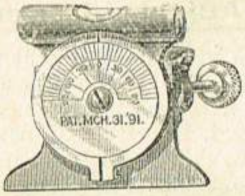
1326 4in. Boxwood Rule Marked Level, 6d. each.
1327 4in. Ebony Ditto, not Rule Marked, 8d. „
1328 4in. Ebony Ditto, Tipped Bottom, 1/- „



1329 Iron Level to Screw on Square Blade, 6d.

1330 Ditto, with Brass Top Plate, 9d. each.

Unique Pocket Level.


PAT. MCH. 31. 91.

1331 This tool combines a Pocket Level and Plumb, Inclinometer and Bevel. Can be applied to a square, straight-edge, and to boring bits. Nicely finished, Nickel-plated on brass.

Price 3/6 each; post free, 3/9.

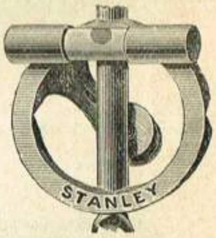
Bit and Square Level.

The frame of this Level has three pairs of **V** slots on its back edges. The shank to a Bit will lie in these slots, either parallel with the bubble glass, at an exact angle to it, or at an angle of 45 degrees.

A Thumb Screw secures the Level to the Bit, in either position; and boring can be done with perfect accuracy as to perpendicular, horizontal, or angle of 45 degrees, by observing the bubble-glass while turning the bit.

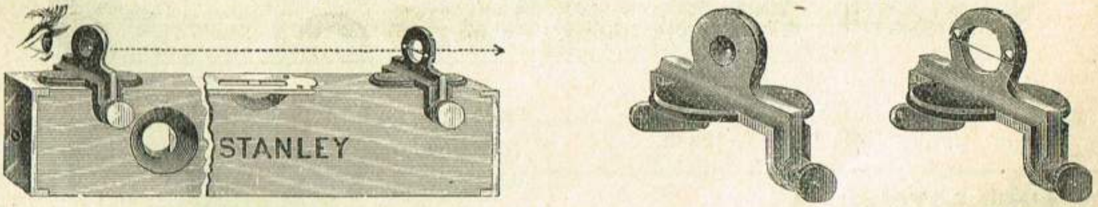
The frame can also be attached to a Carpenter's Square. Two shoulders rest on the top of the horizontal leg to the square, thus making it an accurate spirit level. The upright leg of the square will indicate an exact plumb line.

1332 No. 44. Bit and Square Level, Brass Frame, in a box ... ... 1/3 each.



Level Sights.

By the use of these ingenious devices which can be attached to any Level, the owner has a convenient and accurate means for levelling, from one given point to another at a long distance away. When not in use, the Level Sights are easily detached, and can be packed away in a small space for future use.



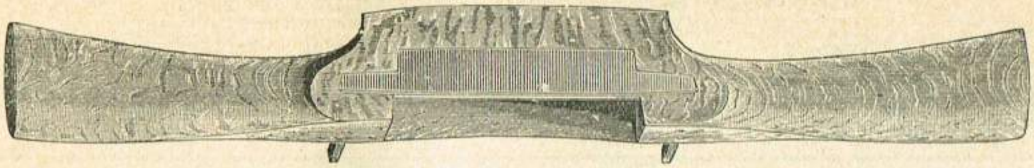
1333 No. 1. Improved Level Sights, for Wood Levels, in a box ... ... 2/9 per pair.

We would make a special request to all our customers to forward their orders to us direct.

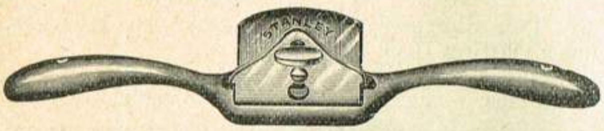
Our trade and connection have been built up by considerably over half-a-century's careful attention to all the details of our business, and we are convinced that no house is in a position to supply goods of equal value at lower prices; and we have reason to know that many ironmongers will disingenuously offer to supply Tools at "NURSE & CO.'S" prices which never came out of our Warehouses.

Direct trading, therefore, will ensure greater satisfaction to our Customers, and will help us to retain the high reputation our goods have earned in the past.

Spokeshaves—Wood and Iron.

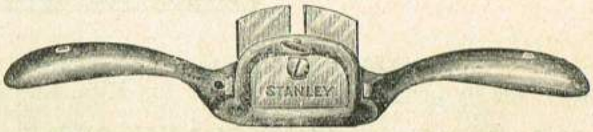


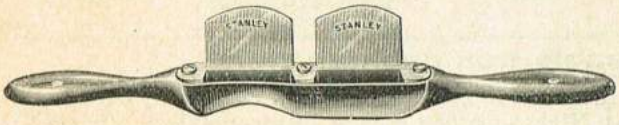
		1½ to 2in.	2¼ and 2½in.	3in.	3½in.	4in.
1334	Beechwood	9d.	9d.	11d.	1/-	1/4 each.
1335	Boxwood	1/-	1/-	1/3	1/6	1/9 „
1336	Boxwood, Brass-plated on face	1/6	1/6	1/8	—	— „
1337	Coachmakers' Beechwood	—	1/6	1/8	2/-	2/3 „



1338 Double Iron Spokeshave, Raised Handle, 10in. long, 2⅛in. Cutter, 9d. each. Extra Irons 3d. each.

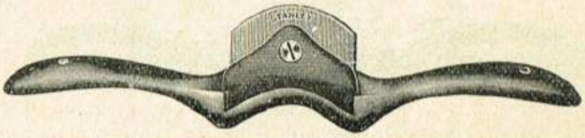
1339 Adjustable Mouth Spokeshave, Raised Handle, 10in. long, 2⅛in. Cutter, 1/- each. Extra Irons, 3d. each.

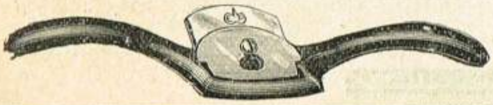




1340 Double Cutter Spokeshave, Hollow and Straight, 1½in. Cutters, 1/- each. Extra Irons, 3d. each.

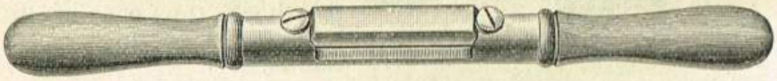
1341 Model Double Iron Spokeshave, Hollow Face, 10in. by 2⅛in. Cutter, 1/3 each.





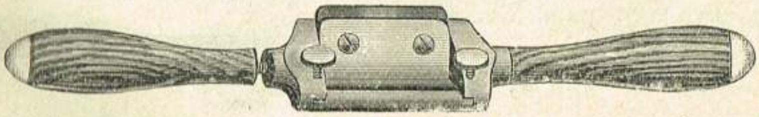
1342 Double Iron Round Face Spokeshave, Raised Handle, 10in. by 2⅛in. Cutter, 1/3 each.

Circular Spokeshave.

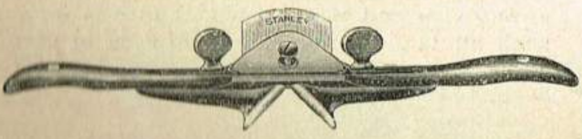


1343 Will work in a smaller circle than any other shave, the angle of knife being so arranged that it cuts instead of scraping the grain of the wood. Either Handle can be removed to work in cramped places, 3/3 each. Free by post, 3d. extra.

Improved Four-faced Spokeshave.



1344 This Shave has a throat regulator which will present to the knife four faces; one flat, two oval or convex, and one concave. With either face a wide or narrow throat may be had. The makers claim that "All that any other shave will do this will do also, and that then it will do some more." Price 4/6.



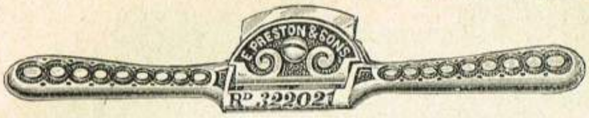
Patent Chamfer Spokeshave.

This tool can be easily adjusted by means of the thumbscrews attached to the Guides; and will chamfer an edge any desired width up to 1½in.

1345 No. 65. Raised Handle, 1½in. Cutter, 1/6.

Spokeshaves.

Round-face Spokeshave for Circular Work.

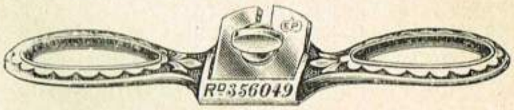


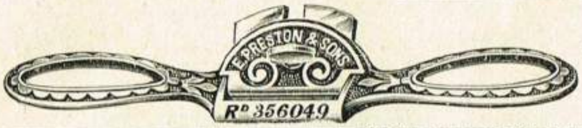
1346 A very neat and handy Tool, Nickel-plated, with Round Face, enabling the user to work in small circles. Warranted Cast Steel Cutting Irons.

Price ... ... 1/- each.

Round-face Nickel-plated Spokeshaves.

1347 This Shave is made with Raised Hollow Handle, is Nickel-plated, and has the Cutting Iron fastened by a Thumb-screw, making it convenient for adjustment. Irons 1in. wide. Price ... ... 1/- each.





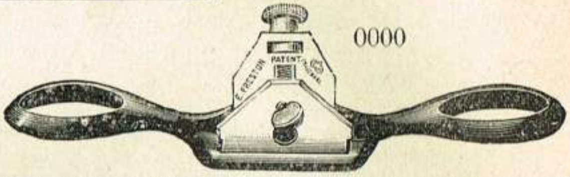
1348 This Shave is similar to above, but is larger and has a Cutting Iron 1⅜in. wide.

Price ... ... 1/6 each.

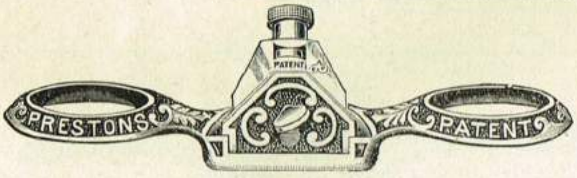
Patent Adjustable Spokeshave.

1349 Improved Adjustable Iron Spokeshaves, 2/3 each; free by post, 3d. extra. Irons for ditto, 7d. each.

1350 Same Shave with Rounded Face, 2/3 each.



Patent Adjustable Malleable Iron Spokeshave.

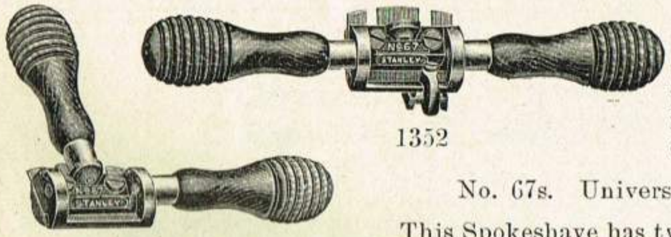


1351 New Pattern of this illustration, with body full Nickel-plated; a very handsome Tool, 2/9 each; post free, 3/- each.

The Cutting Iron of this Tool is readily adjusted by means of the Milled Nut; no hammer is required. By simply turning the Nut the Iron is adjusted to any cut desired.

By a simple device the Cutting Iron can be adjusted sideways, so as to set the cutting edge square with the face of shave. The Frame is of Malleable Iron, and the Cutting Iron of Best Cast Steel. It is the Best Shave in the Market.

Stanley's Universal Spokeshave.



1352

Both Handles are detachable, and either of them can be screwed into a socket on top of the Stock, thus enabling the owner to work into corners, or panels, as no other spokeshave can do.

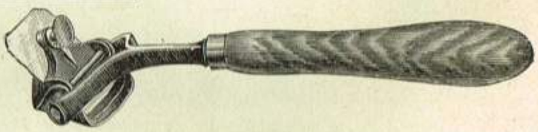
No. 67s. Universal Spokeshave ... ... 5/6 each.

This Spokeshave has two detachable Bottoms, adapting it equally well to circular work or straight; and, by means of a movable Width Gauge the Tool can be used in Rabbeting.

Adjustable Box Scrapers.

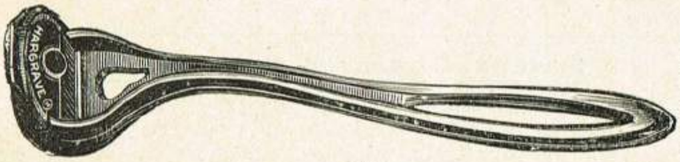
1353 Adjustable Box Scrapers, with 2in. Cutters, 1/9 each.

Extra Cutters for same ... 4½d. each.



Box Scraper.

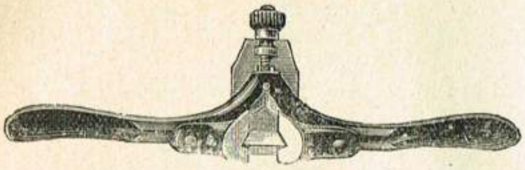
Cut One-quarter Size.



1354 This Scraper is made with a heavy Cast-steel Blade, which is held in place by a strong Cap and Screw. The Knife is set at such an angle with the Handle as to give a paring cut. It is 14in. long, and nicely Japanned and Polished.

Price ... ... 2/- each.

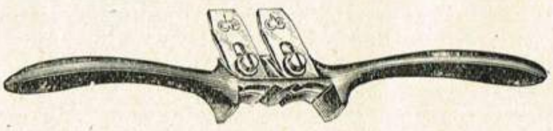
Patent Adjustable Stop Chamfer Shave.



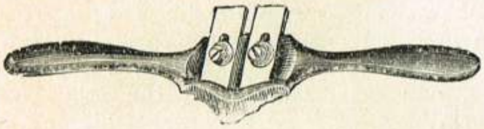
1355 The Cutting Iron of this tool is readily adjusted by means of the Milled Nut. No hammer is required; by simply turning the nut any cut desired is obtained. The tool also makes its own stop; this is a great advantage, as both the chamfer and stop are made at the same time, thus dispensing with the use of the chisel. The Fences (which are adjustable from $\frac{1}{8}$in. to 1in.) and the Top Plate of the Cutting Iron are adjusted and fixed by means of the Thumbscrews. Thus it will be seen a turnscrew is unnecessary. The above advantages will be at once apparent to all who have a use for such a tool. Made in Malleable Iron, with Best Cast Steel Cutting Irons.

Price 3/3 each; postage 3d. extra.

The Improved Circular Sash Router.



1356 Has two Cutting Irons, and will work right or left; this is a great advantage over the old style made in Beechwood, which works only one way, and so necessitates having two shaves. It is made to work with either $1\frac{1}{2}$in., $1\frac{3}{4}$in., or 2in. by $\frac{5}{8}$in. Sash Planes, either Lamb Tongue or Ovolo Mouldings, and can be made to work with any plane-makers' pattern of these mouldings. Price 3/6 each; post free 3/9. When ordering send size and pattern of moulding required.

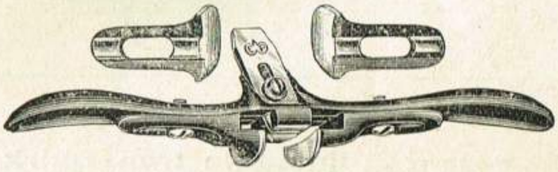


Common Ovolo Routers.

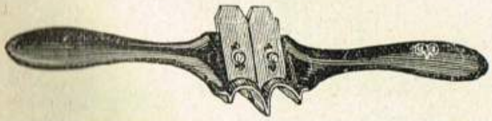
1357 A similar Router to above, made to work Common Ovolo Mouldings, that is, working both "on" and "down" the same. Prices—$\frac{1}{4}$in. 3/6, $\frac{3}{8}$in. 3/6, $\frac{1}{2}$in. 3/9, $\frac{5}{8}$in. 3/9, $\frac{3}{4}$in. 4/- each.

The Improved Circular Rabbeting and Fillister Router.

1358 Is an accompaning tool to the Sash Router, and has one Cutting Iron and two pairs of Adjustable Fences, which enables it to be used either as a Rabbeting or Moving Fillister Router. These Fences slide along a groove, and are adjustable for working out the Rabbet on various thicknesses of bar. The Shouldered or Fillister Fences are adjustable from $\frac{1}{8}$in. to $\frac{3}{4}$in. Price 2/9 each; post free 3/-.



The Improved Circular Bead Router.

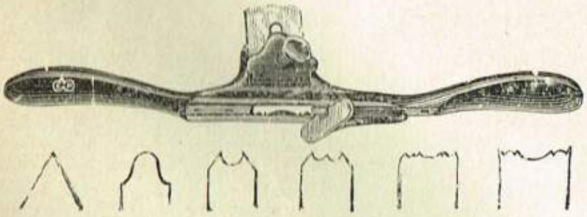


1359 Has two Cutting Irons, and is made in twelve sizes, varying in sixteenths from $\frac{1}{8}$in. to $\frac{9}{16}$in., and in eighths from $\frac{5}{8}$in. to 1in., the whole forming a complete set of Beads. Per set of twelve, 38/6.

$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
2/9	2/9	2/9	3/-	3/-	3/3	3/3	3/6	3/6	3/9,	4/-	4/3 each.

Any size sent per post 3d. extra.

Preston's Patent Hand Reeder and Moulding Tool.

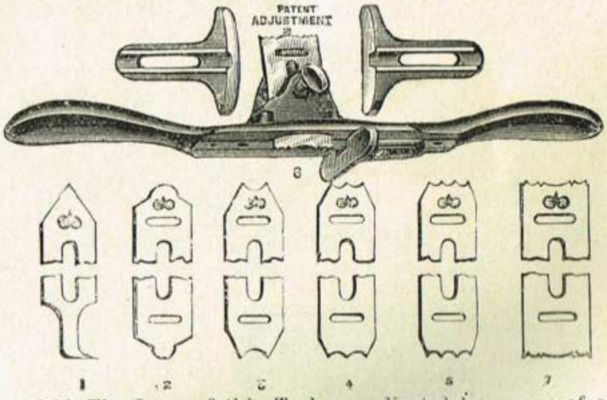


1360 This Tool will be found to be of great service to Carpenters, Joiners, Cabinet Makers, Shop Front Fitters, Show Case Makers, etc.

Price, complete with 6 Irons and 3 Fences, 4/6.

Post free 4d. extra.

Preston's Improved Patent Hand Reeder and Moulding Tool.



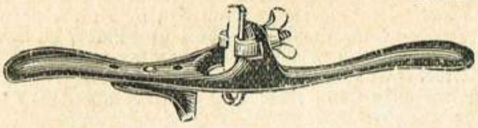
1361 The Irons of this Tool are adjusted by means of a Milled Nut in the same way as No. 1363. All the Cutters are made double-ended, as shown in the illustration.

Price, complete with 6 Cutters and 3 Fences, 5/6.

Post free 4d extra.

Spokeshaves—*continued.*

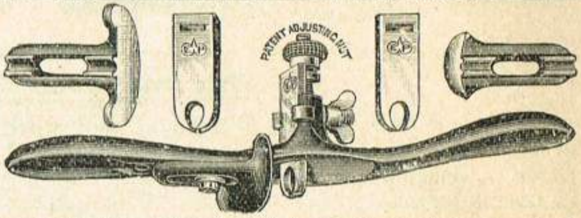
Circular Quirk Router.

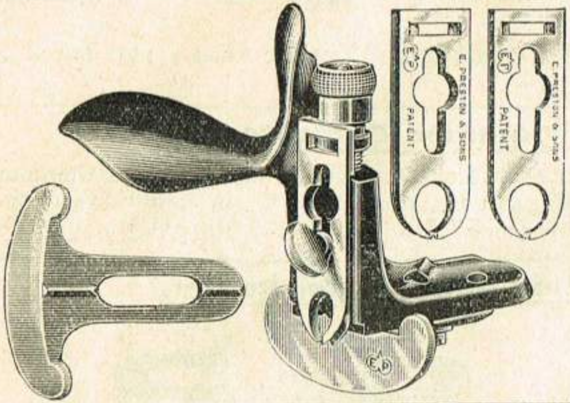


1362 Has three Interchangeable Cutting Irons of different thickness, which are readily changed and fixed by means of a thumbscrew. The irons are adjustable to any depth, and have two Cutting Teeth working in front of the Cutter, which is slightly narrower than the Teeth, and so a clear Quirk is made of one uniform size. The Fence is adjustable from ⅛in. to 3in. Price 3/6 each, postage 4d. extra. This tool will work either circular, straight, or across the grain.

Improved Circular Quirk Router with Patent Adjustment.

1363 This Tool is an improvement on No. 1362, as the Irons are readily adjusted by means of the Milled Nut. The Milled Nut also acts as a stop, and prevents the Cutting Iron from being forced back when in use. Price 4/6 each, postage 4d. extra.





Patent Adjustable Iron Quirk Router.

1364 Japanned with Bright Parts.

This is a new and entirely novel form of Quirk Router with three Cast Steel Cutting Irons and two Fences, one for straight and the other for circular work.

The Cutting Irons are readily adjusted by means of the Milled Nut; no hammer is required; by simply turning the nut the Irons are adjusted to any cut desired.

Price 4/6 each.

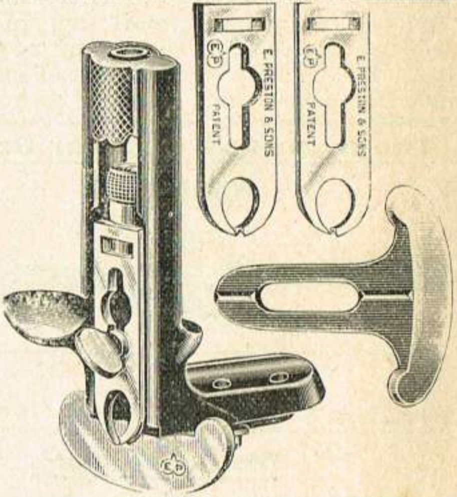
Patent Adjustable Iron Quirk Router.

1365 Japanned with Bright Parts.

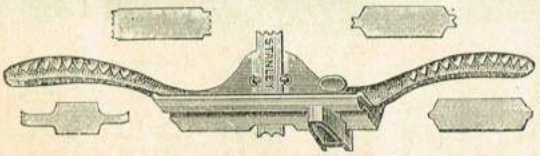
Another new and entirely novel form of Quirk Router, with three Cast Steel Cutting Irons and two Fences, one for straight and the other for circular work.

The Cutting Irons are readily adjusted by means of the Milled Nut; no hammer is required; by simply turning the Nut the Irons are adjusted to any cut desired.

Price 4/6 each.



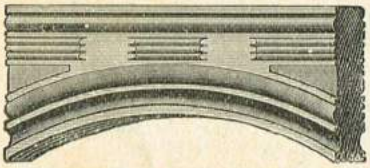
Stanley's Patent Universal Hand Beader.



For beading, reeding or fluting straight or irregular surfaces, this tool is invaluable to wood-workers.

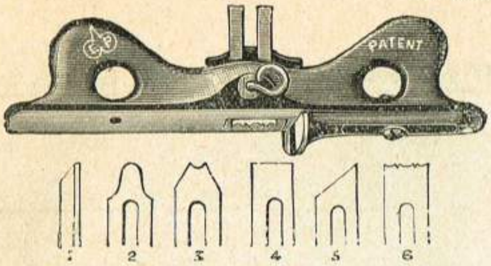
Six Superior Steel Cutters go with each tool. Both ends are sharpened, thus embracing six ordinary sizes of beads, four sets of reeds, and two fluters.

The cutter is firmly clamped to the stock. A gauge with long, straight bearing surfaces is used in ordinary work, and a gauge with oval bearing surfaces is used for curved or irregular forms of work. Either gauge can be shifted from one side of the cutter to the other without separating it from the stock, and can be rigidly set at any required distance from either side of the cutter.



1366 66A. Iron Stock, with Six Steel Cutters, price 3/9 each, post free 4/-. Extra Cutters or Blanks for same, price 3d. each.

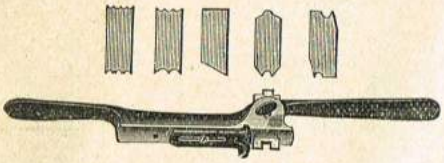
These Hand Beaders are now sent out Nickel-plated and with a somewhat larger handle, nicely reeded, so as to give a better grip to the hand.



Fret Workers' Reeder and Moulder.

1367 No. 1 Cutter is a Cutting Gauge and Grooving Tool. Nos. 2, 3, and 6 are for Moulding purposes. Nos. 4 and 5 are for Chamfering and Rabbeting.

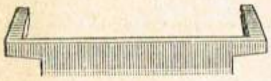
Price 2/- each. Postage 3d.



New Pattern Hand Beader.

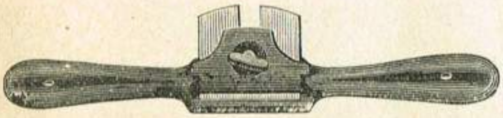
1368 With 6 Irons cutting 12 different Patterns (as illustration).

Price 2/3 each. Post free 2/6 each.



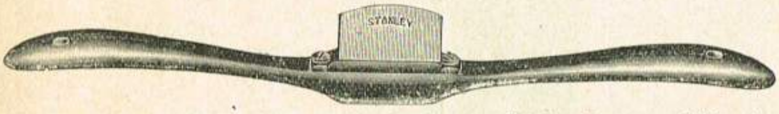
Spokeshave Irons.

		To 2	2½	3	3½	4in.
1369	Joiners' Spokeshave Irons ...	4d.	4½	5d.	5½	6d. each.
1370	Coachmakers' Spokeshave Irons	—	6d.	7d.	7½.	9d. ,,



Light Iron Spokeshave.

1371 Light Iron Spokeshave, Japanned Handle, 9in. long, with 1¾in. Cutter. 6d. each.

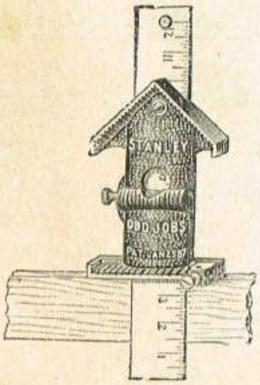


Coopers' Iron Spokeshaves.

1372 Cooper's Iron Spokeshaves, Light Pattern, 18in. long by 2⅛in. Cutters, 1/6 each.
1373 Ditto ditto Heavy Pattern, 19in. long by 4in. Cutters, 2/6 each.

Stanley's "Odd Jobs." (25,000 Already Sold.)

This Tool embraces in itself and when in combination with an ordinary Carpenters' Rule: Try-Square, Mitre Square, **T**-Square, Marking Gauge, Mortise Gauge, Depth Gauge, Mitre Level, Spirit Level and Plumb, Beam Compass, Inside Square for making Boxes and Frames.



This Tool is now sent out with a 12in. Graduated Rule inserted in it, and near one end of the Rule is an adjustable steel point, so that a Mechanic who has this Tool can do all ordinary jobs with only a Saw, a Hammer, and a Plane in addition.

Attach the Tool to its Rule, making a try-square or a T-square, with long or short tongue; also, a right or left-handed mitre-square. The pointed steel rod is a scratch-awl.

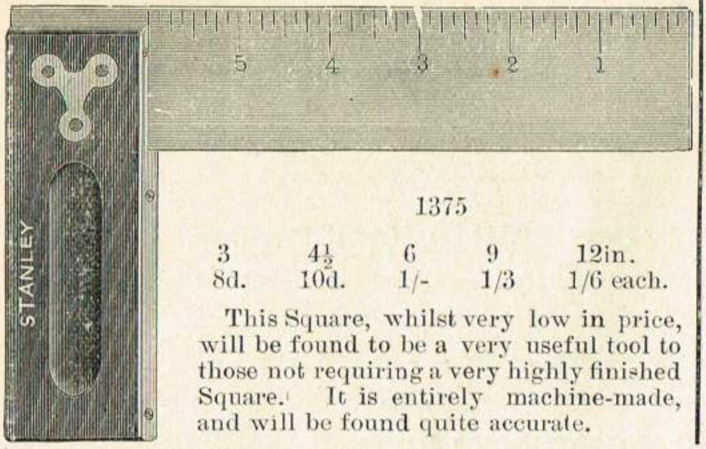
A marking-gauge is made by setting the point, or pencil, at any required distance from the square end of the stock. A mortise-gauge also, by inserting an additional point, or pencil, in the angle at the head of the Rule. A graduated depth-gauge is furnished by extending the Rule down from the square end of the stock.

The steel point at mitred end of the Tool forms a centre, from which a circle can be swung (as with a beam compass) 1½in. to 13in. in diameter. A circle of 25in. diameter can be made, if the Rule alone is used, with a pencil in the angle at its head.

1374 No. 1 "Odd Jobs," Nickel-plated, with Level and Rule. Price 2/9 each. Post free 3/- each.

Squares.

Rosewood Try-Squares.

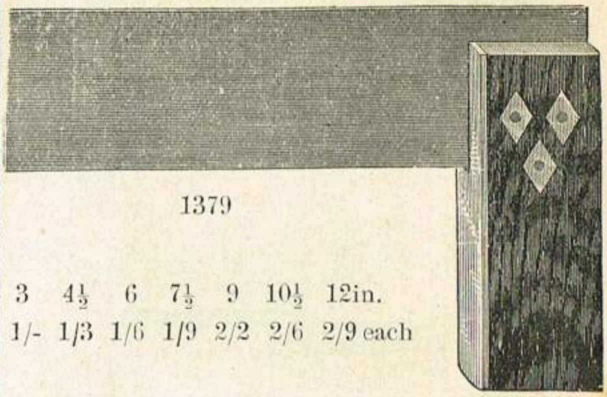


1375

3	4½	6	9	12in.
8d.	10d.	1/-	1/3	1/6 each.

This Square, whilst very low in price, will be found to be a very useful tool to those not requiring a very highly finished Square. It is entirely machine-made, and will be found quite accurate.

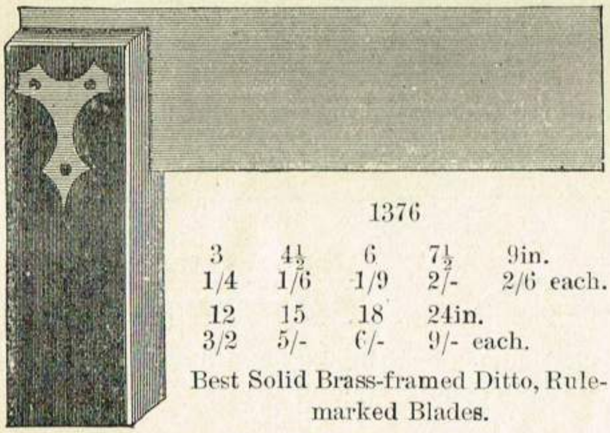
Sheffield-made Rosewood Squares.



1379

3	4½	6	7½	9	10½	12in.
1/-	1/3	1/6	1/9	2/2	2/6	2/9 each

Best Ebony Squares.



1376

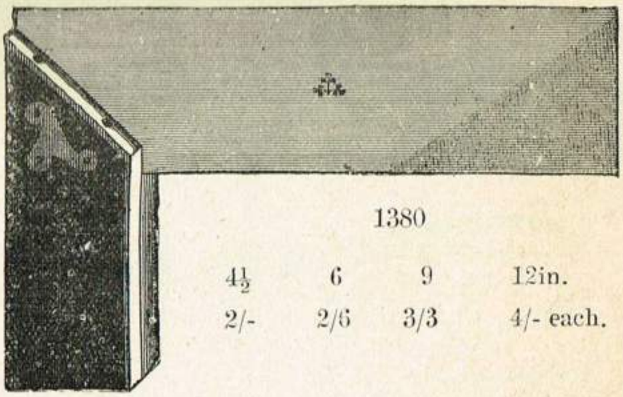
3	4½	6	7½	9in.
1/4	1/6	1/9	2/-	2/6 each.

12	15	18	24in.
3/2	5/-	6/-	9/- each.

Best Solid Brass-framed Ditto, Rule-marked Blades.

3	4½	6	9	12	15	18	24in.
2/-	2/4	2/9	4/-	5/-	7/-	9/-	16/- each.

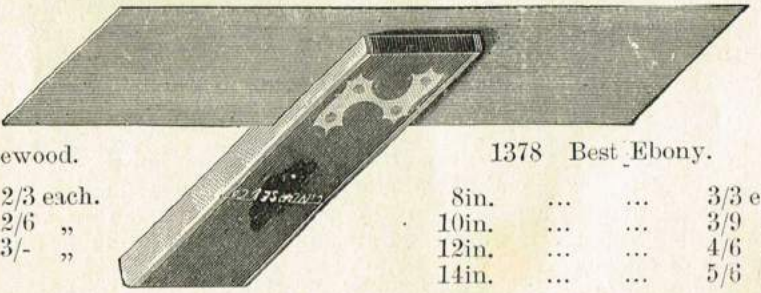
Ebony Try and Mitre Squares.



1380

4½	6	9	12in.
2/-	2/6	3/3	4/- each.

Mitre Squares.



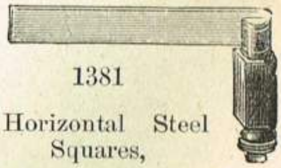
1377 Rosewood.

8in.	2/3 each.
10in.	2/6 „
12in.	3/- „

1378 Best Ebony.

8in.	3/3 each.
10in.	3/9 „
12in.	4/6 „
14in.	5/6 „

Coach Squares.



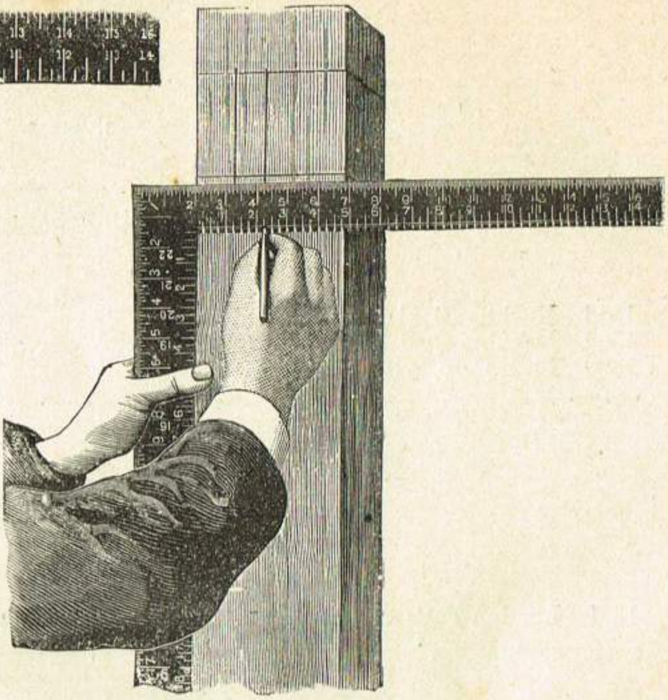
1381

Horizontal Steel Squares, Gun-metal Handles, 4/3 each.

For all descriptions of Engineers' and Fitters' Steel Squares see Engineers' Section.

Carpenters' Steel Squares.

PECK STOW & WILCOX CO.



1382

The Crenelated Square

For the use of Carpenters and Builders.

This Square is invaluable to the mechanic. It is designed to facilitate the operation of marking timber for mortices or the "laying-off a frame." At the same time it secures the utmost accuracy. It excels all other squares for carpenters' or builders' use. Turning the timber is nearly dispensed with, as three sides can be marked while it remains in the same position. By the use of this square, one man can lay off more timber in the same length of time than two men can in the ordinary way. You can mark on either side or over-head.

DIRECTIONS FOR USE.

Take the Square in the left hand, lay the tongue of the Square upon the surface to be marked for a tenon or mortise, lower the end of the main arm of the square next to you, say about two or three inches from the upper surface; place the awl held in the right hand in the notch designating the distance you wish to have the mortise or tenon from the outer surface, gently press the square against the timber, and with one forward movement the mark is made. Replace the Square as before, place the awl in the notch desired for width of mortise or tenon, and again mark as before. For a mortice, replace again; place the awl in a notch equidistant from marks already made, and again mark for a guide to the auger, doing away with witness marks. In using a pencil after having marked, move the Square back a trifle before moving the right hand to avoid breaking the pencil. The same rules apply to its use in marking on the sides of timber or over-head, and with the Square in either hand.

1382 No. 200. Crenelated Steel Square, Polished and graduated in $\frac{1}{32}$in., $\frac{1}{16}$in., $\frac{1}{12}$in., $\frac{1}{10}$in., $\frac{1}{8}$in., $\frac{1}{4}$in., with Brace Measure, 8 Square, and 100 Scales, and Essex New Board Measure, giving feet and inches in full. Price 8/- each.

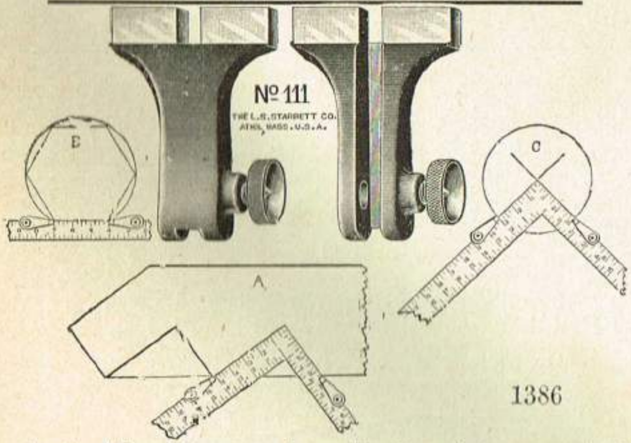
1383 No. 300. Crenelated Steel Square, Polished and graduated in $\frac{1}{16}$in., $\frac{1}{12}$in., $\frac{1}{8}$in., $\frac{1}{4}$in., with Board and Brace Measures. Price 5/6 each.

1384 No. 100. Best Polished Steel Square (NOT Crenelated), Graduated in $\frac{1}{32}$in., $\frac{1}{16}$in., $\frac{1}{12}$in., $\frac{1}{10}$in., $\frac{1}{8}$in., $\frac{1}{4}$in., with Brace Measure, 8 Square and 100 Scales, and Essex New Board Measure, giving feet and inches in full. Price 5/- each.

1385 No. 5. Polished Steel Square, graduated in $\frac{1}{12}$in., $\frac{1}{8}$in., $\frac{1}{4}$in., Board and Brace Measure. 3/6 each.

All above Squares have 24in. Blades, and their accuracy can be relied upon.

Starrett's Stair Gauge Fixtures.


Nº 111
THE L.S. STARRETT CO. ATHOL MASS. U.S.A.
B
C
A

1386

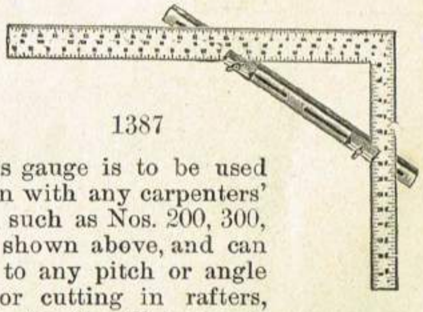
A pair of these fixtures can be readily clamped to a carpenters' steel square to form a gauge for various uses.

Sketch A shows the gauge as applied for laying out a stair stringer; Sketch B, laying off hexagon angles; Sketch C, as used as a centre gauge or in quartering a circle.

These fixtures are light, neat, efficient, and cheap.

Price ... ... 3/- per pair

Patent Stair Gauge.



1387

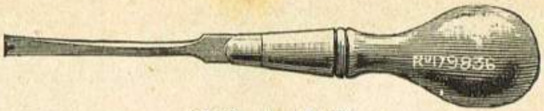
1387 This gauge is to be used in connection with any carpenters' steel square, such as Nos. 200, 300, 100 or 5, as shown above, and can be adjusted to any pitch or angle desired. For cutting in rafters, braces, stairs, etc., it will soon pay its cost, and prove one of the most valuable tools in a carpenter's kit.

It is made in the shape of a steel angle, $\frac{7}{8}$in. by $\frac{5}{8}$in., $\frac{1}{8}$in. thick, ground straight and nickel-plated.

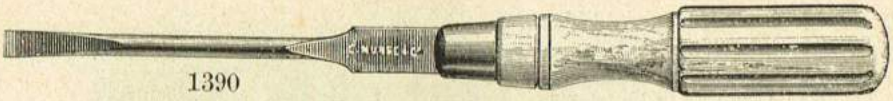
Prices—

18in., Nickel-plated	...	4/6 each.
28in., ,, ,,	...	6/6 ,,

Turnscrews.

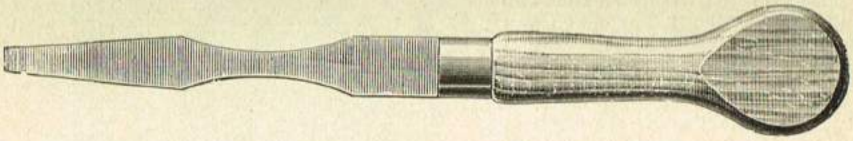


1388 & 1389

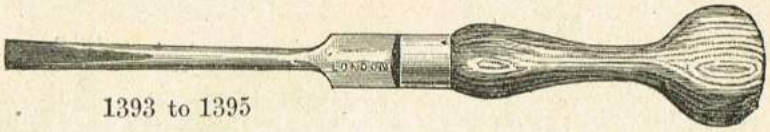


1390

		2	3	4	5	6	7	8	9	10in.
1388	Machine Oval Box Handled Cabinet Turnscrew	6d.	6d.	7d.	9d.	10d.	1/-	1/3	1/6	1/9
1389	Machine Oval Rosewood Handled Ditto ...	8d.	8d.	10d.	10d.	1/-	1/3	1/6	—	—
1390	Firm Grip, with Fluted Handles	—	7d.	8d.	10d.	1/-	1/3	1/6	1/9	2/-

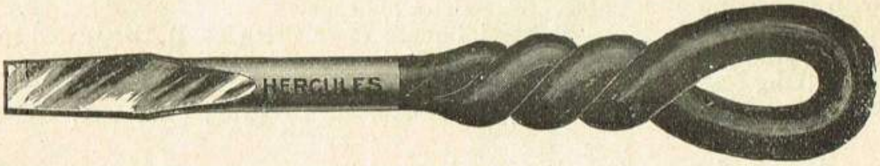


		3	4	5	6	7	8	9	10	12in.
1391	London Pattern Flat Beech Handles ...	6d.	7d.	8d.	10d.	1/-	1/2	1/4	1/6	2/- each.



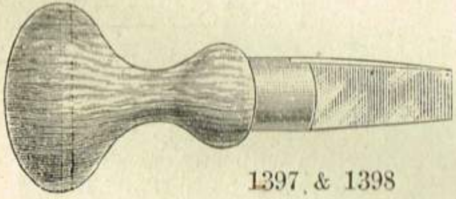
1393 to 1395

		3	4	5	6	7	8	9	10	12in.
1392	Best Flat Beech Handled Cabinet Turnscrews	8d.	9d.	11d.	1/-	1/2	1/4	1/6	1/9	2/3 each
1393	Best Oval Ditto Ditto	10d.	1/-	1/2	1/4	1/6	1/9	2/-	2/3	2/9 „
1394	Best Oval Boxwood Handled Ditto	1/-	1/3	1/6	1/9	2/-	2/3	2/6	2/9	3/3 „
1395	Best Oval Ebony Handled Ditto	1/3	1/6	1/9	2/-	2/3	2/6	2/9	3/-	3/9 „

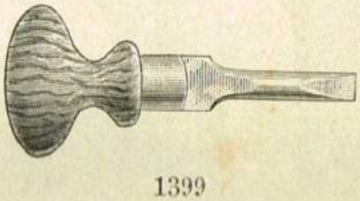


1396 The "Hercules" Screwdriver, a strong useful article—

Length of Blade	2	3	4	5	6	7	8in.
Price	4½d.	6d.	7d.	8d.	9d.	10½d.	1/- each.

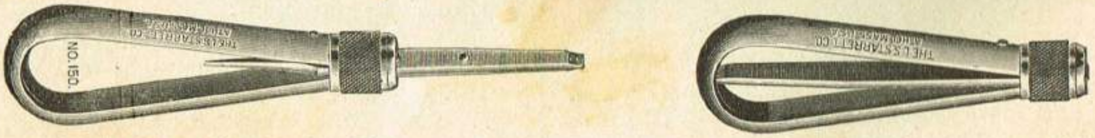


1397 & 1398



1399

1397	Strong Bench Plane Iron Turnscrew, Beech Handled	... ...	1/- each.
1398	Ditto ditto Boxwood Handled	... ...	1/6 „
1399	Extra Small Boxwood Handled Turnscrew	... ...	1/- „



1400 Starrett's Pocket Companion Turnscrew ... ... 1/- each.

"Yankee" Ratchet Screwdrivers.

The demand for these up-to-date Turnscrews steadily increases.

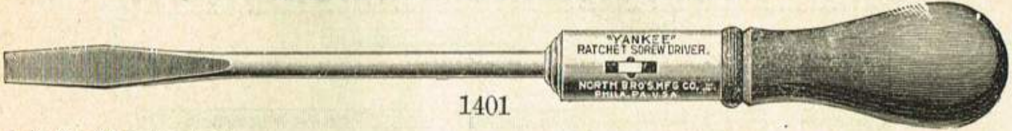
The friction in the ratchet mechanism is so slight as to be hardly felt; the backward movement is as easy as in a good "stem-winder," and just as noiseless. When a screw is screwed in, it stays where put, and is not screwed out when handle is turned back. The construction of ratchet and pawls is such that neither can bend nor break, wear nor get out of order, and permits a very compact arrangement, making the tool more convenient in size and shape, of less weight, and also the making of smaller sizes of tools than have heretofore been made.

The adjustment for right or left hand is exceedingly simple. For right hand, or to ratchet a screw in, push the slide to end of slot towards bit; for left hand, or to ratchet a screw out, push the slide towards handle of driver. If the slide is placed midway between ends of slot, the blade is held rigidly, and the driver can be used as an ordinary Screwdriver with fixed blade.

The materials and workmanship are of superior quality in every detail. The drivers are strong, durable, handsomely finished, and sold at interesting prices.

"Yankee" Ratchet Screwdriver, No. 10.

Right and Left Hand, and Rigid.


"YANKEE" RATCHET SCREW DRIVER.
NORTH BRO'S.MFG.CO. PHILA.PA.U.S.A.

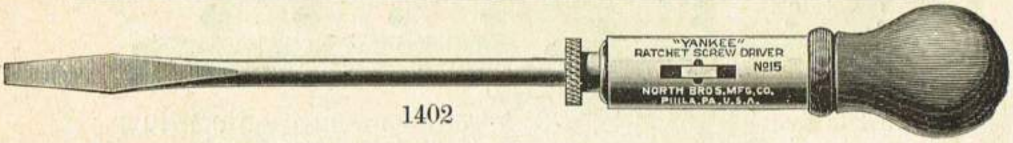
1401

Made in the following sizes:—

2	3	4	5	6	8	10	12in.
1/3	1/6	1/9	2/-	2/3	2/6	2/9	3/- each.

"Yankee" Ratchet Screwdriver, No. 15.

Right and Left Hand, and Rigid, with Finger Turn on Blade.


"YANKEE" RATCHET SCREW DRIVER
Nº15
NORTH BROS.MFG.CO. PHILA.PA.U.S.A.

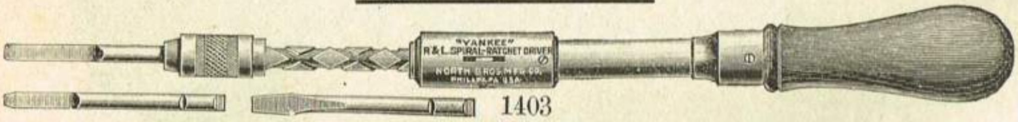
1402

Similar to No. 10, but with thinner blades, the blades in all sizes being $\frac{7}{32}$nds. in diameter. Specially useful to electricians.

2	3	4	5in.
1/3	1/6	1/9	2/- each.

"Yankee" Spiral Ratchet Screwdriver, No. 30.

Right and Left Hand.


"YANKEE" R.&L.SPIRAL-RATCHET DRIVER
NORTH BROS.MFG.CO. PHILA.PA.U.S.A.

1403

The advantages of this over similar tools are in its simplicity, compactness, strength, durability, and that it can be used as a rigid Screwdriver in any part of its length, as well as to push or ratchet screws in or out. The change from right to left hand for either push or ratchet is made by simply moving the slide to either end of the slot. When slide is placed in centre of slot, the rod is held rigidly, and tool can be used as an ordinary Screwdriver. To insert bits in chuck, pull down the milled sleeve (towards handle), insert bit, then release sleeve. If the sleeve does not go back to its place, push on bit and turn in chuck until it does. To remove bit, pull sleeve down and pull out bit. Three bits are included with each tool. The extreme length of tool with bit in chuck is 13½in. when closed, and 19¼in. when extended. Packed one only in strong paper box.

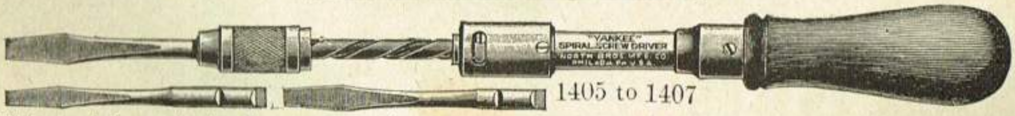
Price 6/- each. Post free, 6/3 each.

1404 "Yankee" Chuck, with 8 Drill Points, to fit No. 30 "Yankee" Turnscrew, 2/6 extra.

Eight drill points, $\frac{1}{16}$in. to $\frac{11}{64}$in. inclusive, are furnished with each chuck. The chuck and eight drill points are put up in a small round wooden box. Price 2/6.

"Yankee" Spiral Ratchet Screwdriver No. 20.

Right Hand only, and Rigid.


"YANKEE" SPIRAL SCREW DRIVER
NORTH BROS.MFG.CO. PHILA.PA.U.S.A.

1405 to 1407

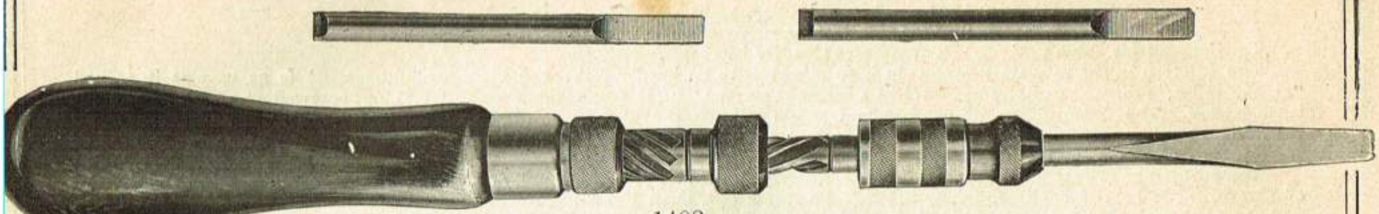
This tool is made in three sizes, viz.:

1405 No. 20. Size 1: Extreme length extended, including bit, 14in. Length of push or stroke, 4in. 4/-
1406 No. 20. Size 2: ,, ,, ,, ,, 17in. ,, ,, ,, 5in. 4/6
1407 No. 20. Size 3: ,, ,, ,, ,, 19in. ,, ,, ,, 6in. 5/-

Three bits are furnished with each tool. Packed one only in a strong paper box.

This tool is a modification of our No. 30 Spiral Ratchet Screwdriver, and is designed to push or ratchet screws into place, but not to take them out in that way. It is arranged to be used a rigid driver by simply moving shifter to opposite end of slot.

Goodell's Reversible Automatic Screwdriver.

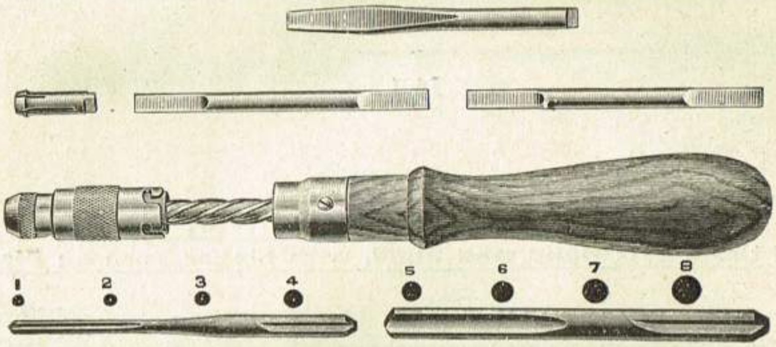


1408

This Tool is one of the simplest and strongest tools of its kind on the Market. It has two distinct Spirals, each working independently of the other.

Price, 5/6 each. Improved Drill Chuck, with 8 Drills to fit, 2/6 each.

Miller's Falls Automatic Screwdrivers.

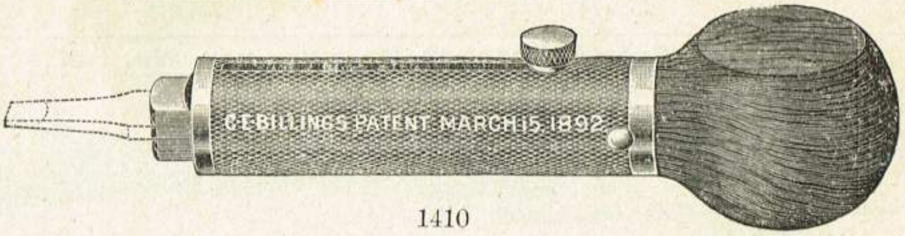


1409

This Tool is sent out complete, with 3 Turn-screw Bits and 8 Drill Points.

Price ... ... 7/6 complete.

Billings' Magazine Screwdriver.

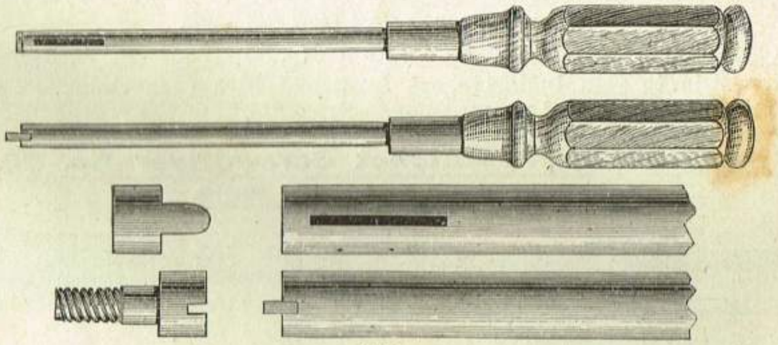


1410

This is a handy little Tool, made of the best materials, Nickel-plated Barrel and Rosewood Head. Four sizes of Screwdrivers are contained in the Handle.

Price ... ... 3/6 each.

The "Samson" Screwdriver, with extra Bits.

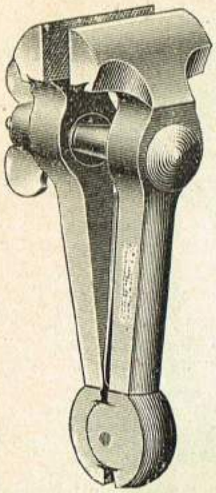


1411

The advantages of this Tool are that the full strength of Blade is retained quite up to the point of strain, and that new Blades can always be readily and cheaply supplied.

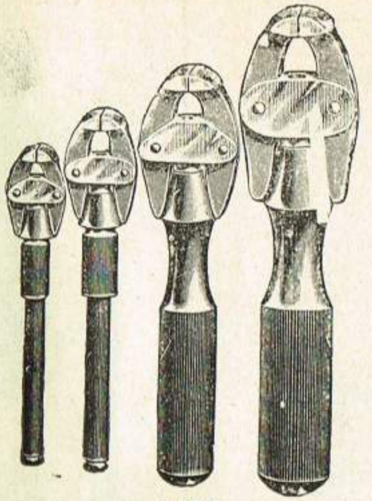
Diameter and length of Shank ...	3/16in. by 2in.	1/4in. by 3½in.	5/16in. by 5½in.	3/8in. by 7½in.	
Prices...	1/6	2/-	2/6	3/-	each.
Extra Blades...	9d.	1/-	1/-	1/3	per doz.

Vices.



1412 Good quality Forged Hand Vices, 3½in. or 4in. 1/9, 4½in. 2/-, 5in. 2/6 each.

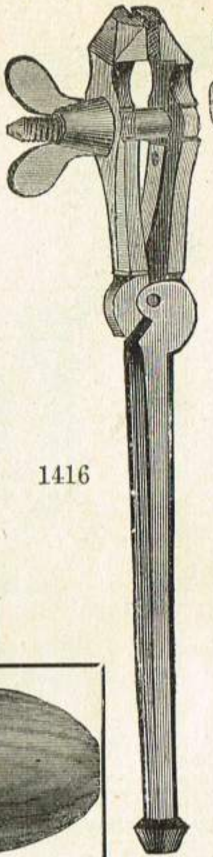
1413 Best quality Lancashire-made Hand Vices, 3½in. 2/-, 4in. 2/3, 4½in. 2/6, 5in. 3/6 each.



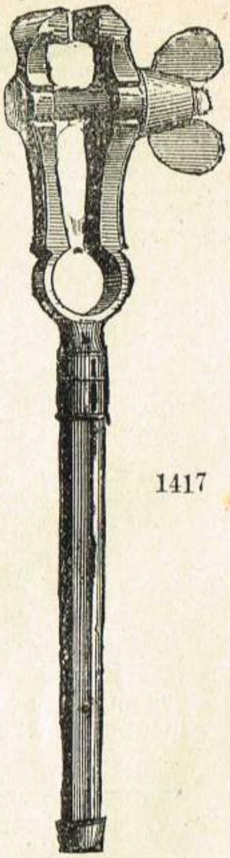
1414

Best Quality Hand Vices, Nickel-plated, with Hollow Handles.

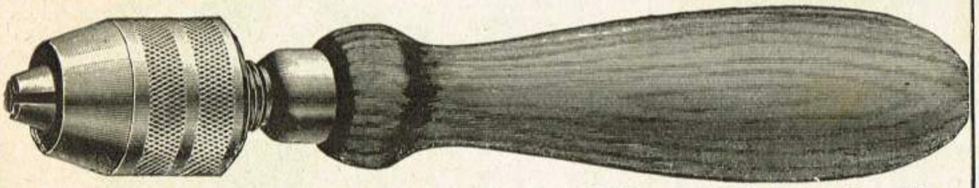
Nos.	1	2	3	4	5 (This size has octagon handle.)
	2/6	3/-	3/6	4/-	5/- each.



1416



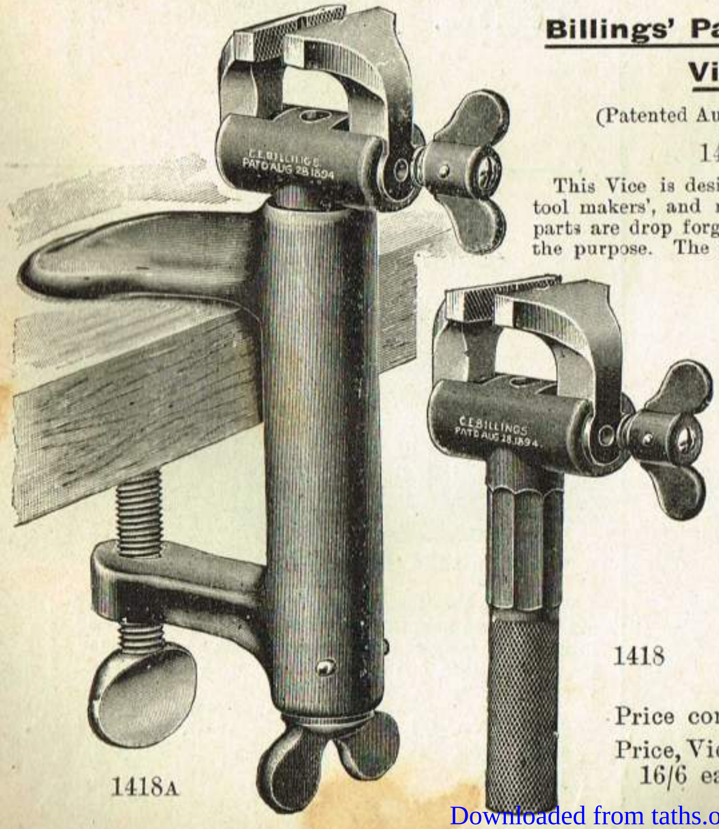
1417



1415 Best Quality Pin Vice, with Three-jawed Chuck, Nickel-plated, with Hollow Handle, holding from 0 to $\frac{5}{32}$. Price 4/6 each.

1416 Solid Handle Pin Vices, 1/6, 2/- each.

1417 Hollow Handle Ditto, 2/-, 2/6 each.


C.E.BILLINGS PAT'D AUG 28 1894
C.E.BILLINGS PAT'D AUG 28 1894

1418A

1418

Billings' Patent Hand Vice.

(Patented Aug. 28th, 1894.)

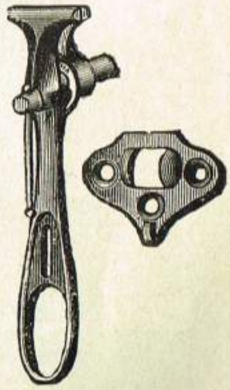
1418

This Vice is designed for jewellers', tool makers', and machinists' use. All parts are drop forged of best steel for the purpose. The jaws have a positive opening and closing movement in parallel lines actuated by a right- and left-hand screw, moving the jaws simultaneously towards or from each other. A hole is entirely through the handle, and the jaws will grasp and hold central, round wire from $\frac{1}{16}$in. up to and including ¼in. in diameter. The jaws open ¾in.

1418A represents a clamp for holding the vice when in use as a bench vice.

Price complete, 25/- each.

Price, Vice without Clamp, 16/6 each.



1419

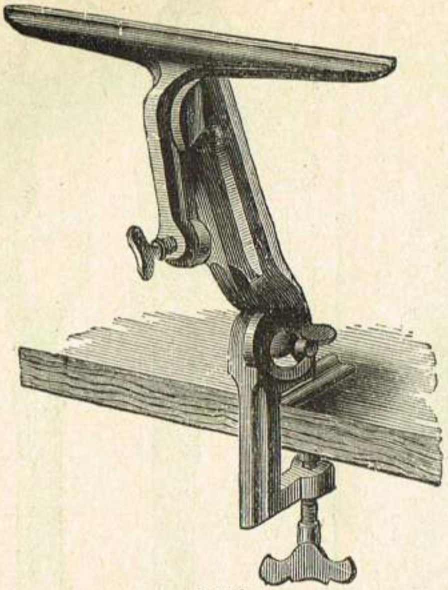
Jewellers' Hand & Bench Vices.

1/3 each; post free 1/6.

Very handy and useful for light work.

Vices.

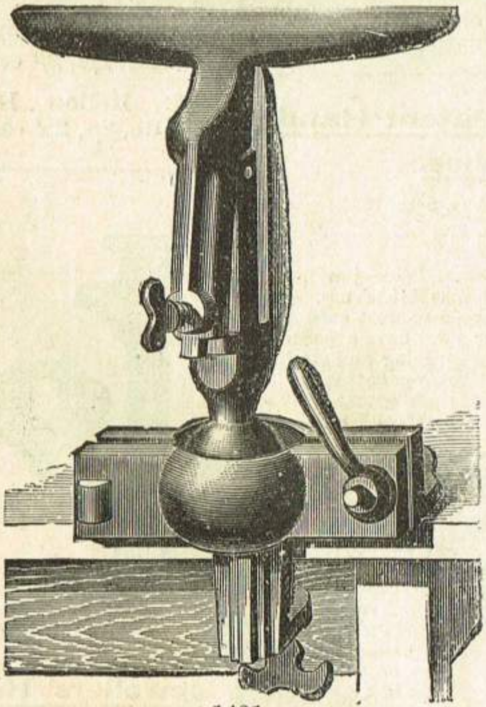
Saw Filers' Vice.



1420

Japanned Saw Filers' Vice.
Price 4/- each.
These are now made with a Lever Clamp for holding Saw in place of Set Screw as in illustration.

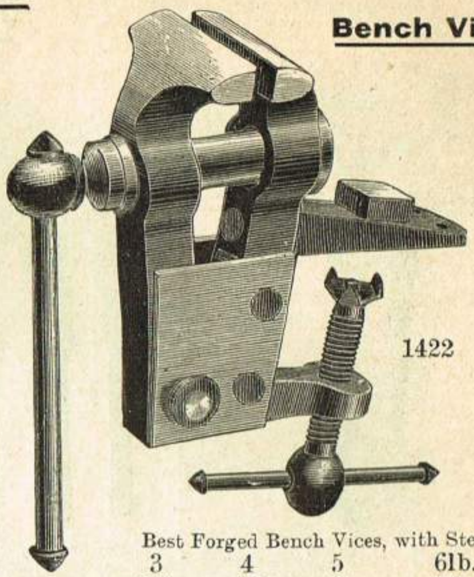
Saw Filers' Vice.



1421

Improved Japanned Saw Filers' Vice, with Ball and Socket.
Price 5/6 each.
These are now made with a Lever Clamp for holding Saw in place of Set Screw as in illustration.

Bench Vice.

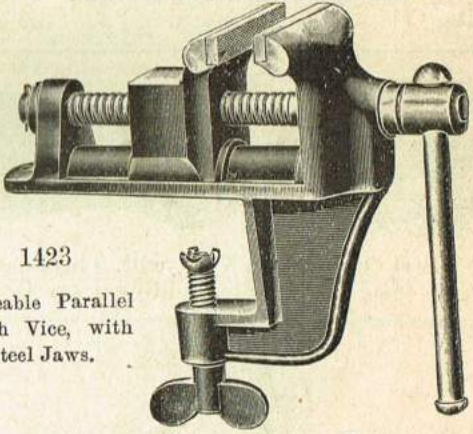


1422

Best Forged Bench Vices, with Steel Jaws.

3	4	5	6lb.
3/6	4/3	5/-	5/9 each.

Parallel Bench Vice.

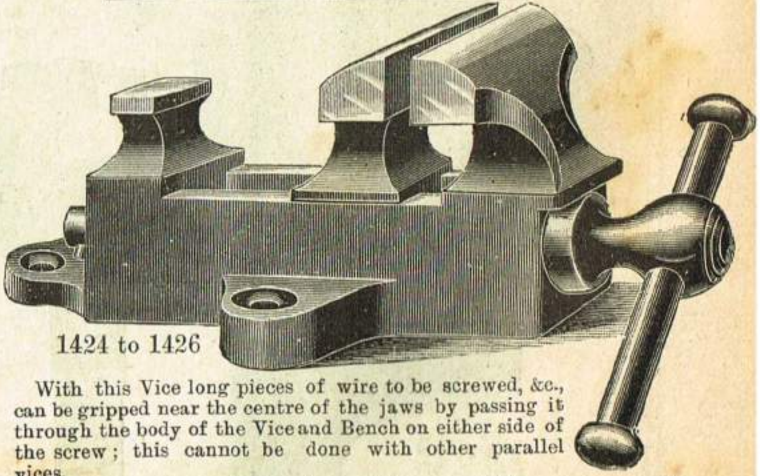


1423

Malleable Parallel Bench Vice, with • Steel Jaws.

2	3	4	6lb.
2/3	3/-	3/9	5/6 each.

New Parallel Handy Vice.



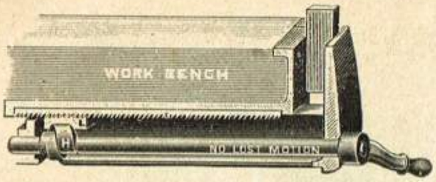
1424 to 1426

With this Vice long pieces of wire to be screwed, &c., can be gripped near the centre of the jaws by passing it through the body of the Vice and Bench on either side of the screw; this cannot be done with other parallel vices.

		Width of Jaws.	Opens.	Price.
1424	No. 00	$1\frac{11}{16}$in.	$1\frac{1}{8}$in.	3/6 each.
1425	No. 0	$1\frac{15}{16}$in.	$1\frac{7}{16}$in.	4/6 ,,
1426	No. 1	$2\frac{1}{16}$in.	$1\frac{9}{16}$in.	5/6 ,,

The 0 and 1 sizes are fitted with hardened Steel Jaws.

The "Lightning" Joiners' Vices.



1427 The "Lightning" Pattern Makers' and Joiners' Vice, with Instantaneous Grip. With Steel or Iron Racks. Illustration shows Joiners' Vice with work gripped.

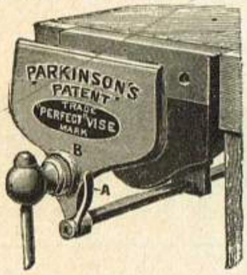
One-third of a turn of handle backwards releases work and leaves the jaw free.

Having only two working parts, viz., Spiral Cam H and Short Rack L, it combines extreme simplicity with great strength.

PRICES.		Iron Racks with Cast Teeth.	Tempered Steel Racks with Machine-cut Teeth.
No. 0J	Amateurs', Jaws 7½in., opens 6in.	13/-	15/6 each.
No. 1J	Joiners', without Bench Hook, Jaws 9in., opens 12in. ...	14/6	17/- "
No. 1J	Joiners', with " " " 9in., " 12in. ...	15/-	17/6 "
No. 1½J	Joiners', without " " " 10½in., " 13in. ...	18/6	21/- "
No. 1½J	Joiners', with " " " 10½in., " 13in. ...	19/6	22/- "

Jaws Drilled to receive Wood Facings. Steel Racks are strongly recommended.

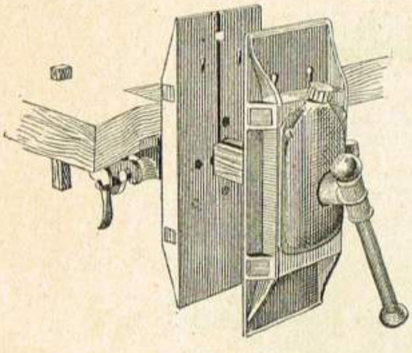
The "Perfect" Woodworkers' Vices.

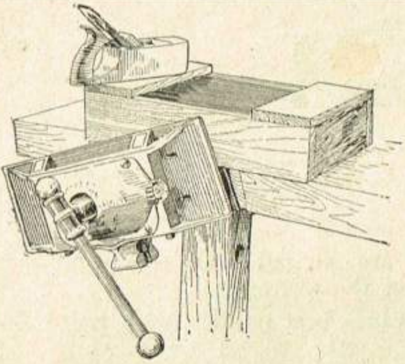


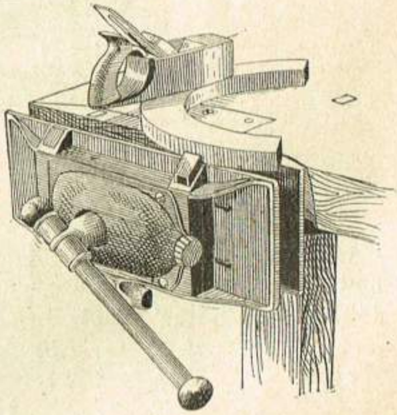
1428 These Woodworkers' Vices can be opened or closed instantaneously by pressing the lever at side, and releasing same, the screw then acts as in an ordinary vice, and any pressure desired can be obtained.

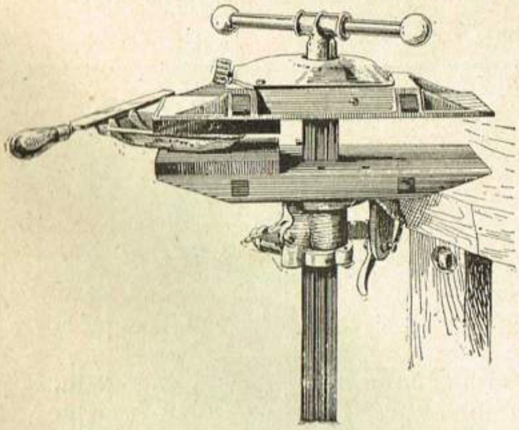
Nos.	Width of Jaw.	Opening.	Weight.	Price.
10A	7in.	6in.	19lb.	12/- each.
10	9in.	12in.	40lb.	16/- "
11	10½in.	12in.	44lb.	18/6 "

The "Emmert Universal" Vice.









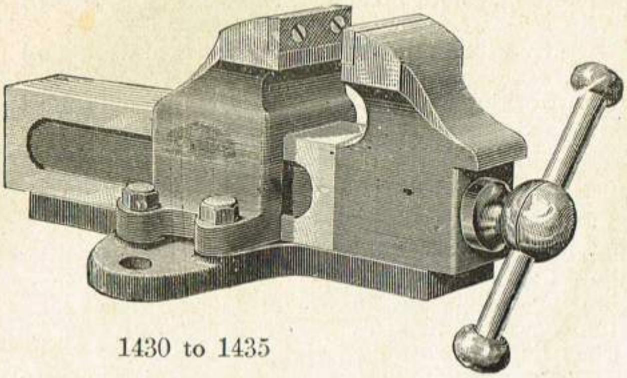
A vice holds work in a fixed position. The "Emmert Universal" Vice holds work firmly in any position. See?

The "Emmert Universal" Vice in position on the side of the work bench is just flush with the top of the bench and presents no obstruction. In this position it can be unlocked in an instant and swung around the complete arc of a circle whose plane is vertical. By simply tripping another trigger it will travel 90° in the arc of another circle whose plane is also vertical, but at a right angle to the plane of the former circle. This brings the vice into a horizontal position, where it will again swing around the complete arc of a circle. But this is not all. At any point on the arc of 90° mentioned above it will swing 180° degrees. At any point in any of the paths traversed by the vice it can be stopped and set as firmly as though that were its only and stationary position. From this somewhat technical description it will be seen that there is hardly a conceivable position in which it is not possible for the "Emmert Universal" Vice to eliminate the difficulty of position. Here is common sense: Don't bend or twist your body to suit your work. Just make the vice turn and hold the work to suit your comfort and convenience.

And now a word as to the construction of the "Emmert Universal" Vice. It is made of iron and steel and weighs about 80lb. The main jaws of this vice are 7in. by 18in., smoothly planed, and moving normally parallel. The ends are squared, and the planed screw sleeve runs through the centre, so that the operator can place his work on either side, making it a right or left-handed vice. Of the main jaws, the moving one is fitted with a device which throws the entire jaw out of parallel to permit the gripping of tapered work. In addition, the inner or fixed jaw has a **V**-shaped grove cut into its face to accommodate a tilting jaw when in use. This jaw adapts the vice to the grasp of wedge-shaped work having two angles, and various other irregular or complex shapes. A tilting jaw is furnished with each vice.

1429 The above is but a brief description of this Vice. Special pamphlets will be supplied on application. Price £4 10s. each.

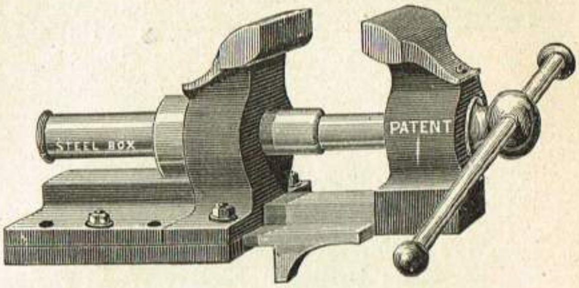
Improved Parallel Vice with Steel Jaws.



1430 to 1435

	Width of Jaws.	To Grip.	Weight.	Price.
1430 No. 00	2¼in.	2in.	5lb.	5/6 each
1431 No. 0	2⅜in.	2¾in.	7lb.	6/6 ,,
1432 No. 1	3in.	3¼in.	11lb.	7/6 ,,
1433 No. 2	3½in.	4in.	21lb.	11/6 ,,
1434 No. 3	4in.	4¾in.	31lb.	15/6 ,,
1435 No. 4	4½in.	5½in.	44lb.	24/- ,,

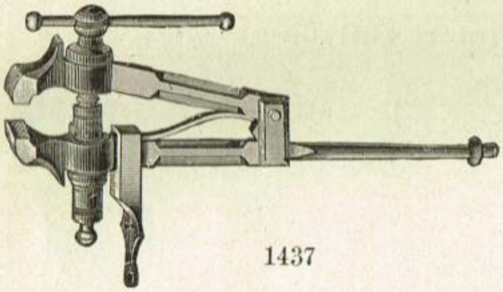
Wrought Vices With Steel Boxes.



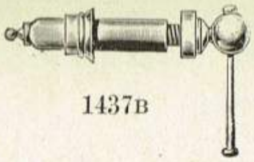
1436

3	3½	4	4½	5	6in. Jaws.
40/-	42/6	47/6	54/-	72/-	90/- each.

These are Best Quality goods suited for heavy use in Engineers' Shops.



1437



1437B

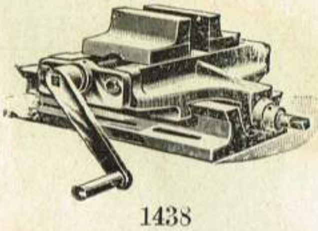
Leg Vices over 35lb. in weight are charged at the rate of 50/- per cwt. Their weight vary somewhat and prices given below are about the average :—

1437 Blacksmiths' Staple Leg Vices, best quality, with Solid Box and Best Steeled Jaws.

Vices with 3	3½	3¾	4	4¼	4½	5in. Jaws.
15/-	17/6	19/-	21/-	24/-	27/6	30/- each.

1437B Vice Boxes and Pins 1/- per lb.

Slot-Drilling Vice.

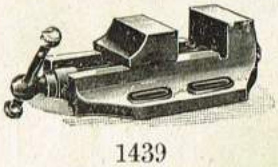


1438

Both Jaws move simultaneously by right and left screw.

Width of Jaws	5in.
Opening of Jaws	6½in.
Traverse of Slide	9in.
Weight	132lb.
Price	£6 10s. each.

Drilling Machine Vice.

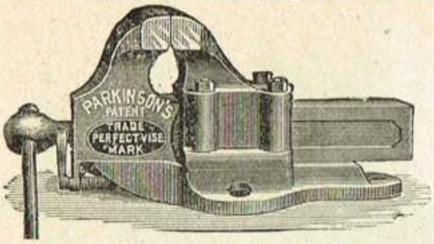


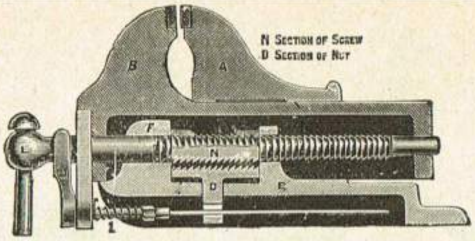
1439

A.	Width of Jaws	2⅞in.
	Opening of Jaws	3⅝in.
	Weight	12½lb.
	Price	15/- each.
B.	Width of Jaws	3¼in.
	Opening of Jaws	6¼in.
	Weight	19lb.
	Price	22/6 each.

All Vices over 28lb. in weight, carriage forward.

Parkinson's Patent "Perfect" Vice, Screw and Sudden or Instantaneous Grip Combined.





ENGINEERS' AND METAL-WORKERS' VICE.

1440

No.	Width of Jaw.	Extent of Opening.	Price.	Weight.
4	2¾in.	3¼in.	20/-	13lb.
5	3¼in.	3¾in.	28/-	33lb.
6	3¾in.	4½in.	34/-	39lb.
7	4¼in.	4¾in.	40/-	56lb.
8	5¼in.	6½in.	46/-	73lb.
9	6½in.	8½in.	58/-	112lb.
9A	7in.	9½in.	80/-	168lb.

Larger and Special Sizes quoted for on application.

Sectional View of Engineers' Vice.

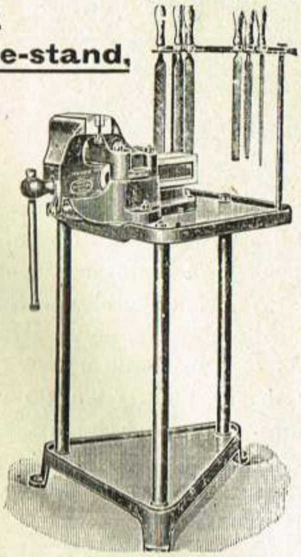
This illustration is a sectional view of the Engineers' Vice, showing its construction. The screw travels with the front Jaw. The nut (D) has its upper portion cut away, and is made of sufficient length to give ample strength and durability. Both nut and screw are formed with "buttress" thread in such a manner that when gripping they interlock with each other, giving great power and security to the grip with little friction, and consequent ease to the workman. The screw cannot be strained, and the nut follows up the wear and tear between itself and the screw, so as to preserve a "perfect" fit of the one to the other, and both are protected from dirt, filings, or damage. Years of work show no deterioration of the parts. It is not so with square threads and solid nuts. Solid nuts and their screws wear apart from each other; the screw becomes smaller and the nut larger, and ere long the threads of the nut or screw, or both, are "stripped," involving periodical outlay.

To "open" the vice, grasp the knob (L) of screw, at the same time compressing the lever (J). The nut (D) is simultaneously moved out of gear with the screw, and the Jaw pulled out to receive the work, then slid into contact with it. On releasing the knob and lever, the nut instantly engages with the screw, and the grip is applied by the vice pin, as in the old vice. The screw may be used to move the Jaw its entire distance of travel, so that all sorts of material may be securely held, and any kind of work done that can be done in a vice. Every part will work and wear well.

Portable Iron Stands, mounted on wheels, are supplied for Engineers' use in yards, for erecting or repairing purposes. These have Telescopic Pillars, which enable the Vice to be readily adjusted in height to suit the stature of workmen.

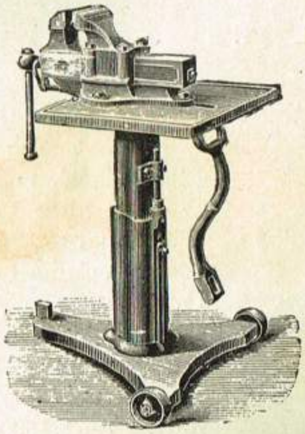
Portable Vice-stand.

1441



This Stand is intended for use in confined spaces, among Machines, Lathes, &c. Top of Table, 18in. by 19in. Height of Table, 30in. Weight, 3qrs. 14lb. A Rack for holding 8 files and a Tray for holding small articles is fitted. The base serves as a shelf. Price £1 10s.

Portable Stand.

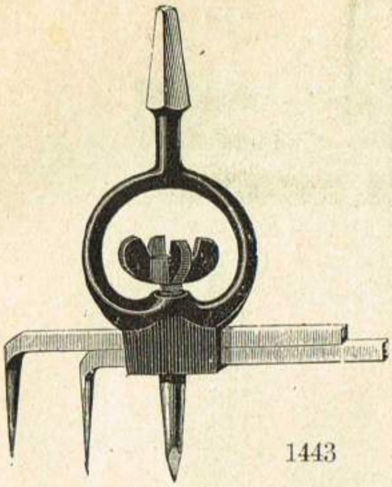


1442

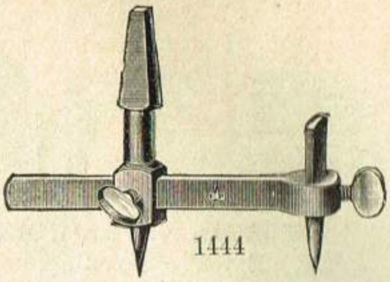
Weight 224lb. ... ... Price £2 7s. 6d.

Vice extra, according to size.

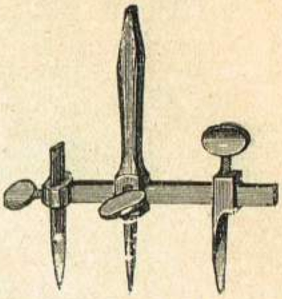
Washer Cutters.



1443

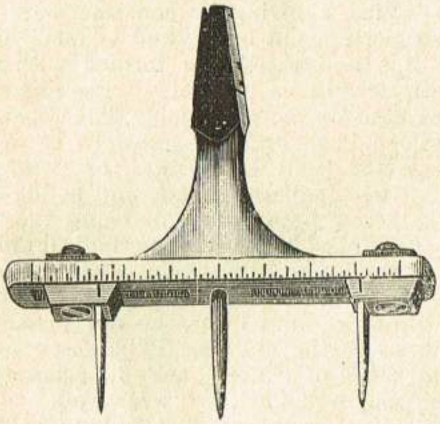


1444



1445 and 1446

1443 Improved Pattern Leather Washer Cutters, 1/6 each.
1444 Single Washer Cutters, 2/-, 2/6, and 3/- each.
1445 Double Washer Cutters, 4/6 each.
1446 Best Quality, all Bright Steel, will cut up to 10in. diam., 7/6 each.

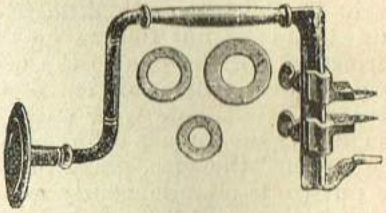


CUT ONE-HALF SIZE.
1447

This tool will cut circles up to 4in., out of leather, paper, rubber, or thin wood. It will cut the inner and outer circle at the same time, and can be used in any ordinary brace. The pin is made of steel, and the knives of the best tool steel, well tempered. Polished and japanned.

No. 1. Price ... ... 2/6 each.

"Universal" Washer Cutter.

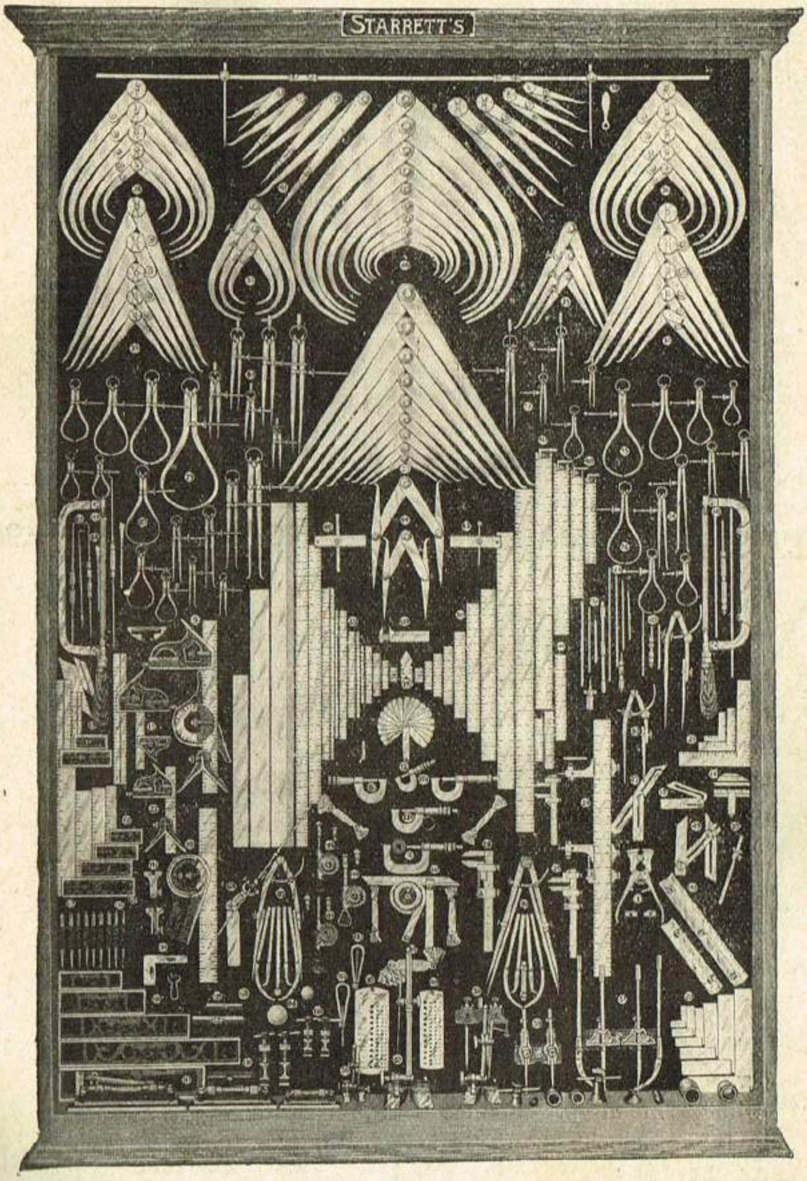


1448 The "Universal" Washer Cutter, for cutting out circles of Wood, Leather, Rubber, etc. Cuts from ½in. to 7in. A strong, durable, and excellent article, price 3/6 each.

THIS concludes the first section of our Catalogue, and it is mainly devoted to Woodworkers' Tools; the later sections of the List contain Engineers', Smiths', Electricians', and Linesmen's Tools, Plumbers' and Painters' Tools, Metal and Woodworking Machinery, and concluding with Bricklayers' and Masons' Tools, Watch and Clock Tools, Amateurs' and Fretworkers' Tools, and Cutlery. So many of our customers remain under the impression that we issue a new edition of our Catalogue every year, that we find it needful to say plainly we do not do so, for there is no occasion for it; the expense of preparing so extensive a Catalogue as ours prohibits our doing it, and there is really no necessity for it, as the changes are but slight. This List is issued in the autumn of 1902, and will hold good during 1902, 1903, 1904, and 1905, and possibly even longer.

If required, owing to any considerable alteration in prices or to the introduction of New Tools, we shall issue small supplementary lists to notify such changes and additions. We would particularly request that all orders for goods required from our Catalogue be forwarded to us *direct*, when customers can rely upon our prompt and careful attention, as well as upon their receiving goods of the most reliable quality only.

ENGINEERS' TOOLS.

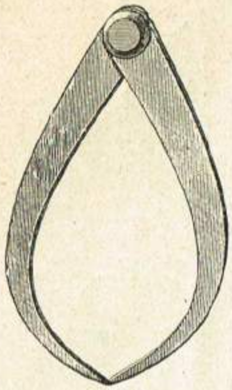


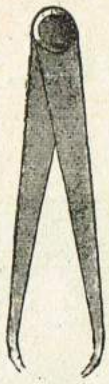
One of the most noticeable features of the present time is the great increase in the demand for High-class Callipers and fine Measuring Tools. We carry a very large variety of these, and our Catalogue will be found replete with the most up-to-date assortment in this Department.

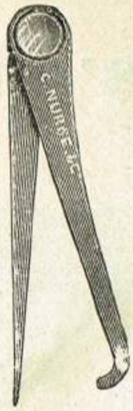
C. NURSE & CO., TOOL SPECIALISTS,

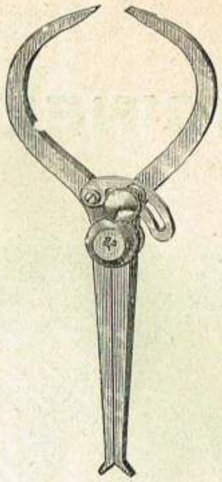
173, 182 & 184, WALWORTH-ROAD, LONDON, S.E.

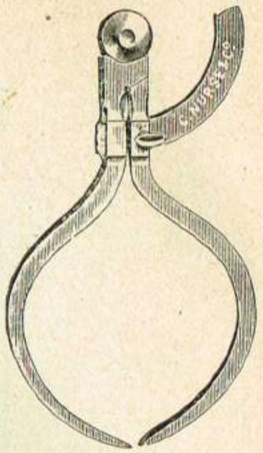
Callipers.


1449


1450


1451

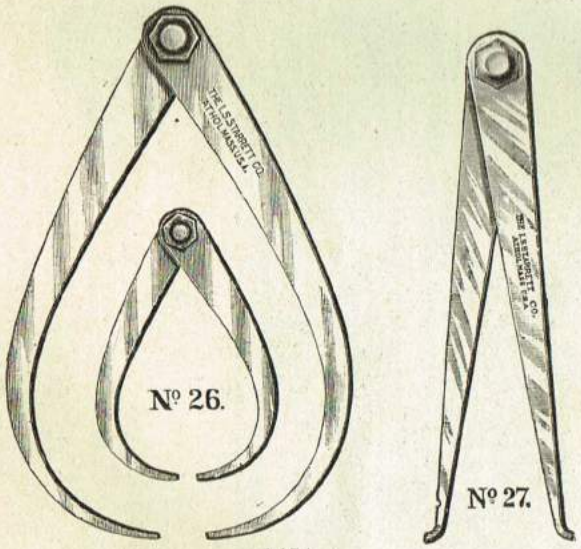

1452


1453

Lancashire-made Callipers.

		To 3	4	5	6	7	8	9	10	12in.	
1449	Outside	9d.	1/-	1/3	1/6	1/9	2/-	2/3	2/6	3/-	each.
1450	Inside	9d.	1/-	1/3	1/6	1/9	2/-	2/3	2/6	3/-	„
1451	Jenny	9d.	1/-	1/3	1/6	1/9	2/-	—	—	—	„
1452	Inside and Outside ...	—	2/3	2/6	3/-	3/9	—	—	—	—	„
1453	Wing Callipers	—	—	2/-	2/3	2/6	2/9	3/-	3/6	4/6	„

Improved Firm-joint Callipers.



1454

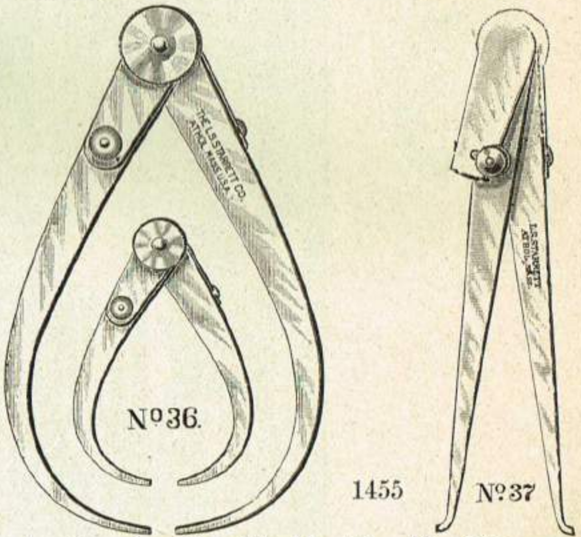
3	4	5	6	8	10	12	14	16	18	24in.	
1/6	1/8	2/-	2/3	2/9	3/-	3/6	5/-	6/-	7/-	10/-	each.

The above sizes refer to the *length* of the Callipers. Their capacity is about one-third greater than the size given.

The improvement in these Callipers consists in the construction of the joint, which is so made as to be drawn together by means of a screw. The main stud is squared and fitted to one leg, thus preventing the stud from turning when loosening and tightening, and insuring a SMOOTH and UNIFORM friction, of more or less tension to suit the user.

The quality of these Callipers is incomparably superior to that of any old style riveted-joint Calliper on the market.

Lock-joint Transfer Callipers.



1455

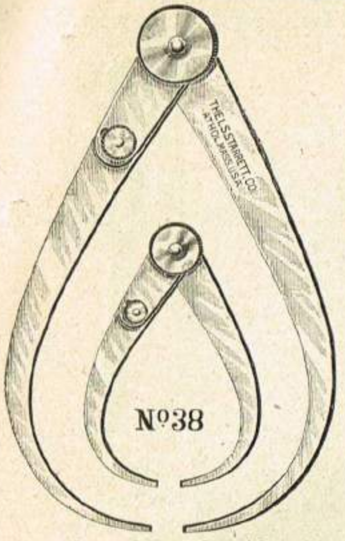
4	6	8	10	12	14	16	18	24in.	
4/3	5/-	6/-	6/9	7/6	8/6	9/6	10/6	14/6	each.

These instruments (Nos. 36 and 37) not only have all the excellent features of Nos. 38 and 39, as described on page 141, but in addition to common use may be used inside of chambered cavities, over flanges, etc., removed and replaced without losing the size callipered. This is done by loosening the nut binding one arm to the auxiliary leaf and swinging it out or in (while the joint is locked) to clear the obstruction, then moving it back against a stop, where it will show the exact size measured.

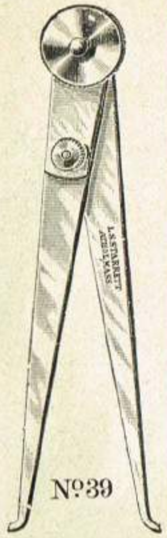
The sizes given refer to the length of the callipers, but the outside ones will calliper a cylinder 20 per cent. larger than their length, and the inside callipers will open nearly twice their length. This applies also to Nos. 26 and 27 on this page, as well as to Nos. 38 and 39 following.

Starrett's Callipers—*continued.*

Lock-joint Callipers.


THE L.S.STARRETT CO. ATHOL, MASS. U.S.A.
Nº38

1456


L.S.STARRETT ATHOL, MASS.

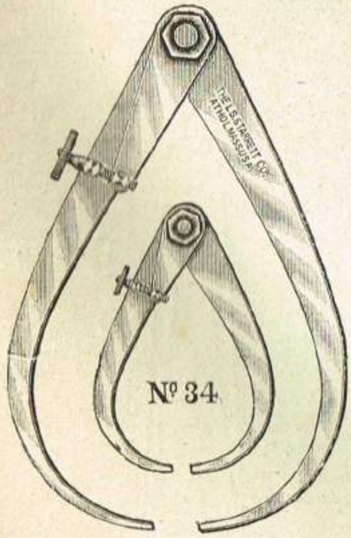
Nº39

4	6	8	10	12	14	16	18	24in.
3/-	3/4	4/3	5/-	6/-	6/9	7/9	8/6	12/- each.

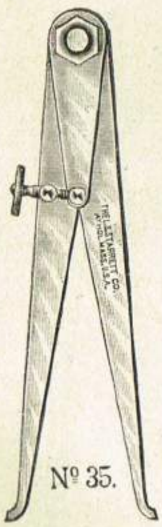
These cuts represent long-needed Tools—viz., simple, light, low-priced and reliable callipers of wide scope for both inside and outside work, that can be instantly adjusted to their full extent, and as quickly locked firm in the joint, and yet provided with a sensitive adjustment. The improvement consists, first, in a socket joint made tapering, and locked or released by a partial turn of the knurled disc drawing it together. A spring washer under the disc maintains an easy friction in the joint when unlocked.

To further describe, in the under side of short arm is a slot containing a stiff spring. Riveted into the middle leg and projecting through an opening in the arm, is a *threaded stud* on which is a knurled nut having a bevelled hub—this bears against a cone in the arm—the action of the spring holding them together turns the nut, presses them apart, and adjusts the leg when the joint is locked. The spring taking up all backlash the legs are firm.

Firm-joint Screw-adjusting Callipers.


THE L.S.STARRETT CO. ATHOL, MASS. U.S.A.
Nº 34

1457


THE L.S.STARRETT CO. ATHOL, MASS. U.S.A.

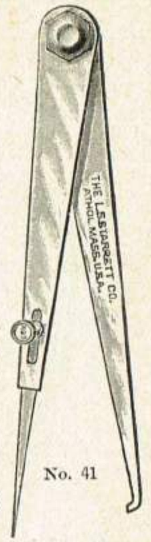
Nº 35.

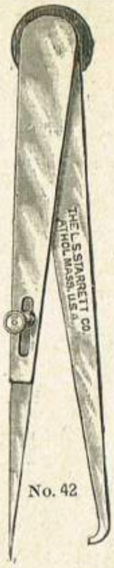
4	6	8	10	12	14	16	18	24in.
3/-	3/4	4/3	5/-	6/-	6/9	7/9	8/6	12/- each.

STARRETT'S PERFECTED FIRM-JOINT SCREW-ADJUSTING CALLIPERS.—The screw adjustment for fine measurements, the improved joint which may be set to any desired degree of uniform tension, the shape and stiffness of the legs, quickness and wide scope of adjustment—all go to make this Calliper a leader in its line.

Hermaphrodite Callipers.

1458


THE L.S.STARRETT CO. ATHOL, MASS. U.S.A.
No. 41


THE L.S.STARRETT CO. ATHOL, MASS. U.S.A.
No. 42

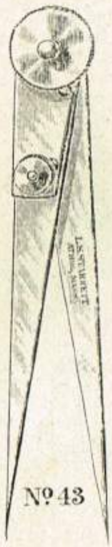
1459

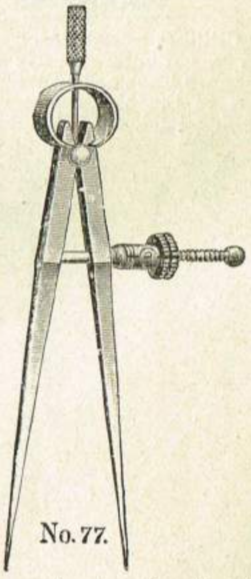
	4	6	8	10in.
No. 41.	2/3	2/9	3/6	4/- each.
No. 42.	3/4	4/-	4/9	5/6 ,,

No. 41.—These Callipers have our adjustable point, as well as the improved firm-joint, which has made our No. 26 Outside and No. 27 Inside Callipers deservedly popular among mechanics. This joint, with its smooth and uniform friction, is incomparably superior to the old style riveted joint.

No. 42.—With our adjustable point, lock-joint and sensitive adjustment. A good thing.

Dividers.





			3	4	5	6	8	10in.
1460	No. 43		—	—	—	3/4	4/3	5/- each.
1461	No. 77	Solid	3/4	4/3	4/3	5/6	—	— ,,
1462	No. 77	Spring	4/-	4/9	4/9	6/-	—	— ,,

NEW DIVIDERS (No. 43).—With our improved lock-joint attachment and sensitive adjustment. It is light and stiff, with large capacity, instantly opened, closed, and locked. The points are nicely tempered.

FAY'S SPRING DIVIDERS (No. 77).—The above cut represents our Spring Dividers with new quick-adjusting, automatic closing spring nut, a critical examination of which will at once show their superiority over all others on the market. Their use will save much valuable time in opening and closing spring-bow Callipers and Dividers.

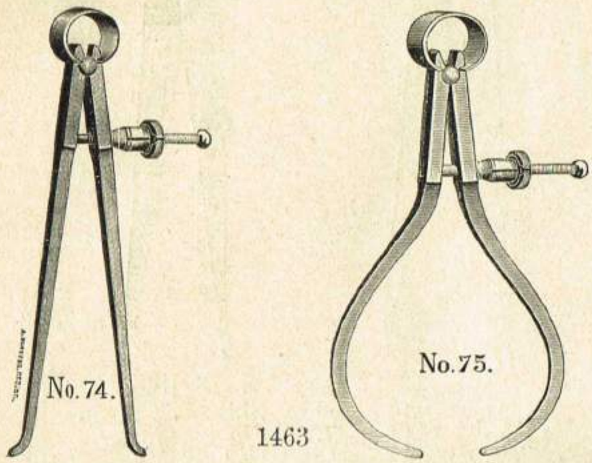
They are also made with a solid nut.

The Fay Patent

Outside and Inside Callipers,

With Spring Nut.

No. 74 represents a new Inside Transfer Calliper, with either Solid or Spring Nut. The bow is stiff, making the Calliper reliable. After callipering inside a chambered cavity, by pressing the legs together they may be withdrawn, and as they spring back will show the exact size callipered.

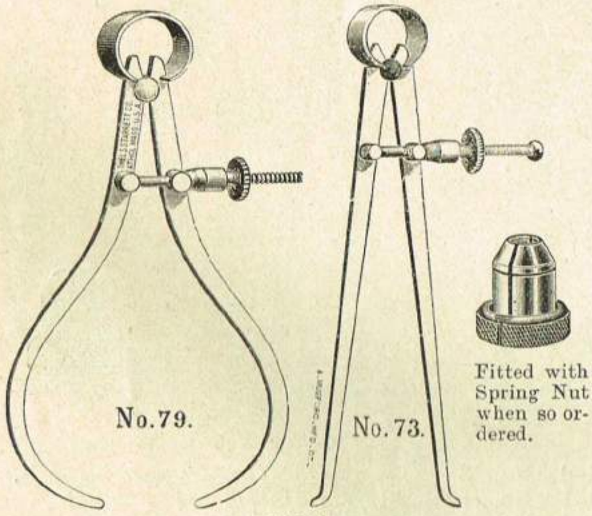

No. 74.
No. 75.
1463

Prices, Outside, No. 75, or Inside, No. 74—

	3	4	5	6in.	
Solid Nut ...	3/4	3/9	3/9	4/6	per pair.
Spring Nut...	4/-	4/3	4/3	5/-	,, ,,

Yankee Outside and Inside Callipers.

The Yankee Callipers and Dividers, manufactured under the Fay Patent, are not quite so heavy as the Fay, and cost less. They are much liked, and on account of price are preferred by many to the higher cost tools. All sizes are supplied with either Solid or Quick Adjusting Nut.


No. 79.
No. 73.
1464

Fitted with Spring Nut when so ordered.

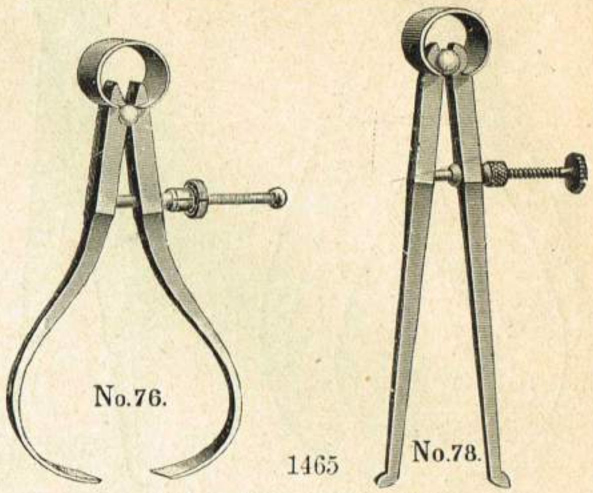
No. 73 represents a new Yankee Inside Transfer Calliper, with either Spring or Solid Nut. The bow is stiff, making the Calliper reliable. After callipering inside of chambered cavity, by springing in the legs they may be withdrawn, and as they spring back will show the exact size callipered.

Prices, No. 79 or No. 73—

	3	4	5	6	8in.	
Solid Nut	2/6	2/8	2/9	3/-	3/4	per pair.
Spring Nut	3/4	3/4	3/6	3/9	4/3	,, ,,

The Fay Patent

Thread and Inside Callipers.


No. 76.
1465
No. 78.

Prices, Thread, No. 76—

	3	4	5in.	
Solid Nut ...	3/4	3/9	3/9	per pair.
Spring Nut...	4/-	4/3	4/3	,, ,,

Inside, No. 78—

	4	5in.	
Solid Nut ...	3/9	3/9	per pair.

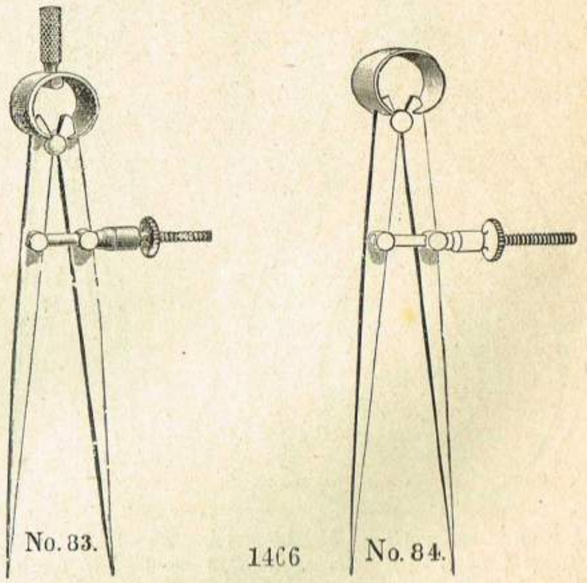
No. 78 Inside Callipers are not made to receive the Spring Nut.

Duplicate Parts of Fay Callipers or Dividers.

Prices—

Screw and Ball ...	8d.	Leg	1/6
Thumb Attachment	8d.	Spring	1/-
Solid Nut	5d.	Jam Washer ...	5d.
Spring Nut	1/-	Fulcrum Stud ...	5d.

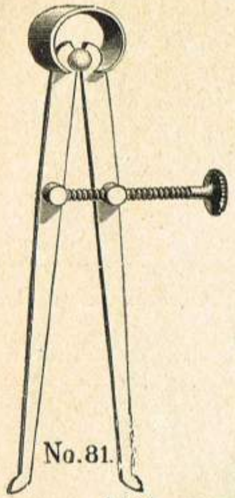
Yankee Spring Dividers.


No. 83.
1466
No. 84.

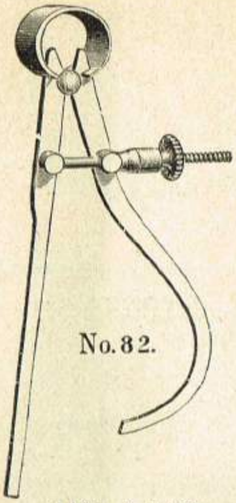
Prices (Either Style, No. 83 or No. 84)—

	3	4	5	6	8in.	
Solid Nut	2/6	2/9	2/9	3/-	3/9	per pair.
Spring Nut	3/3	3/6	3/9	3/9	4/9	,, ,,

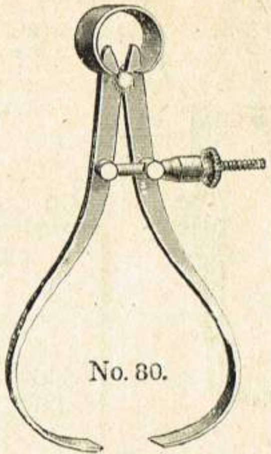
Yankee Inside, Keyhole and Thread Callipers.



1467



1468 & 1469

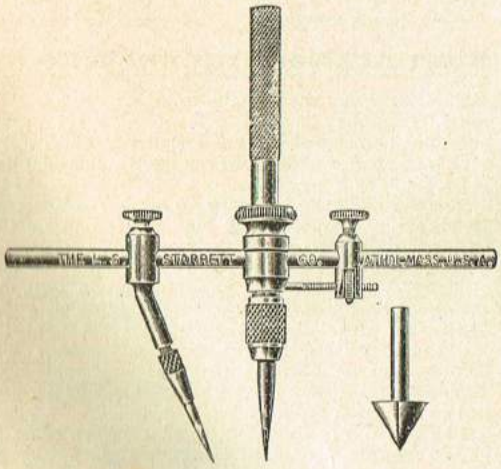


1470 & 1471

			3	4	5	6in.
1467	No. 81.	Inside Callipers with Solid Nut	—	2/6	2/9	3/- each.
1468	No. 82.	Keyhole Callipers with Solid Nut	2/6	2/9	—	— „
1469	No. 82.	Ditto with Spring Nut	3/3	3/6	—	— „
1470	No. 80.	Thread Callipers with Solid Nut	2/6	2/9	3/-	— „
1471	No. 80.	Ditto with Spring Nut	3/3	3/6	3/9	— „

Duplicate parts for Yankee Callipers are same price as for Fay's on Page 142, with exception of Yankee Legs, which are 1/- each.

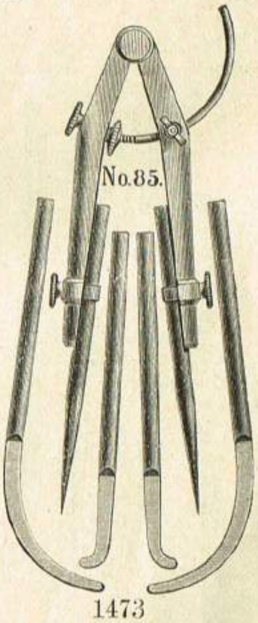
Starrett's Universal Dividers.



1472 No. 89s. 7/- per pair.

The adjustable scriber holder is reversible and carries either a fine-tempered steel point or a pencil lead, held in a split socket by a knurled nut. With the holder turned outward, work can be laid close to corners, something that cannot be done by a similar tool of any other make. Turned inwards, points may be brought close together to scribe the smallest circle. With the 4in. beam, 7½in. and under may be scribed. The V-centre-point may be substituted for regular point adapting the tool for scribing around a drilled hole. Price, 4in. Beam and Centre Point, 7s. Also supplied with 13in. Beam for 1s. extra. Extra Steel Points, 6d. each.

Starrett's Improved Extension Divider.



1473

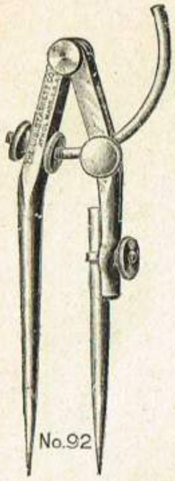
This is a well-made, nicely finished Divider, with auxiliary calliper legs, which, together with a common pencil, form convenient combinations. Our patent locking nut between the arms, against which a spiral spring acts, is a valuable feature. After the fine adjustment is made, the nut may be turned back, locking spring and arms firmly, thus remedying the weak point which renders the common wing divider only as stiff as the adjusting spring. A full-threaded nut on the stud, through which the quadrant passes, is a more durable fastener than two or three threads tapped in the arm to hold the wing of the old style. The head and arms of this tool are made from best malleable iron, the rest of steel. The points are hardened and warranted first-class. The smallest size is 7in. long; by adjustment of points it becomes 9in., and will scribe a 22in. circle; will calliper 11in. outside and 13in. inside. The second size is 9in.; by adjustment of points it becomes 12in.; and will scribe a 30in. circle, and calliper 14in. outside and 16in. inside. The Dividers will be sold without calliper legs *when so ordered*.

Prices

7in.,	with Divider Legs only	4/9 each.
9in.	„ „ „	5/9 „
7in.	complete	8/6 „
9in.	„	9/6 „

For Ball Points which may be used with this tool, see page 144.

Starrett's Patent Dividers, No. 92.



1473A

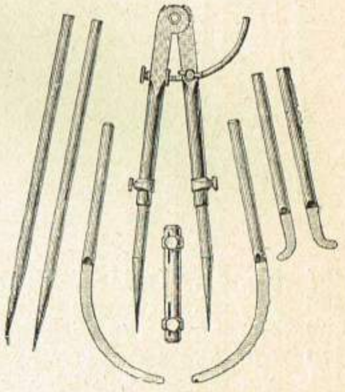
This cut shows an improved Divider with our patented features which make it the best thing in its line yet produced. Both points are crucible forged steel, nicely tempered. The quadrant passes through the leg which is split. The clamp screw springs the slit parts and fractionally locks the quadrant firm. The screw threads have stock enough to last a lifetime. After fine adjustments are made, our patent lock nut between the arms locks the spring in the leg firm, curing the defect in the old style dividers of the points dodging out and in with the grain of the wood. The adjustable point may be instantly removed and a common pencil inserted in its place. The Dividers are light yet rigid and pretty to handle, and are worth twice the price of the cheap malleable dividers now on the market.

PRICES.

	6	7	8in.
Plain	3/6	3/9	4/- each.

Starrett's Improved Bronze Divider, No. 90.

Nickel-plated.



1474

The head and socket legs of this tool are made from drawn (not cast) bronze metal, and are hard, tough, strong, finely finished, and nickel-plated.

The joint is large and firm. Our patent locking-nut between the arms, against which a spiral spring acts, is a valuable feature. After the fine adjustment is made, the nut may be turned back, locking spring and arms firmly, thus remedying the weak point in the common wing divider, which is only as stiff as the adjusting spring. The quadrant is fastened by our improved method.

A common pencil fits either socketted leg, while an auxiliary holder fits reversed end of either short point for an extension. The head, with short point, is 8in. long; may be extended 2in. more; will calliper 10in. outside and 12½in. inside. With short points it will scribe a 24in. and with long points a 34in. circle.

PRICES.

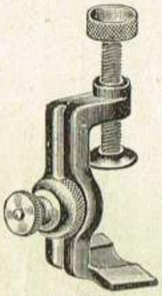
With short points only	8/- each.
Set complete	14/6 „

Sent complete unless otherwise ordered.

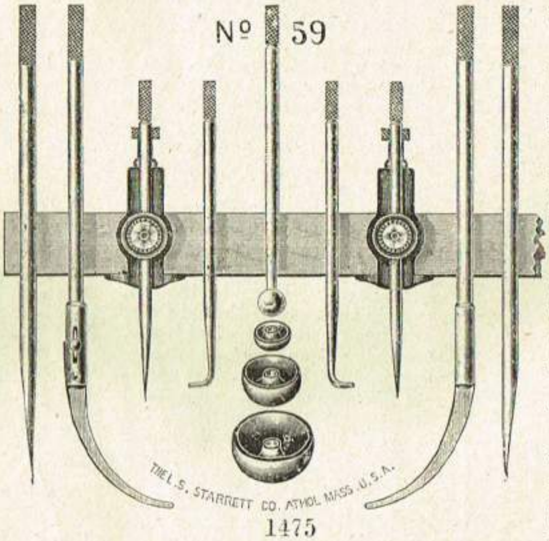
Extra Parts.

Long Points	2/- each.
Outside or Inside Calliper Legs ...	2/- „
Auxiliary Pencil Holder	1/6 „

For Ball Points which may be used with this tool, see below.



1475A



1475

Set complete 17/6

Starrett's New Trammels, No. 59.

This cut shows the Trammels fastened to a wooden beam, which may be any size from ¾in. to 1⅝in. wide, and of any thickness desired (requiring no fitting), giving stiffness according to the length and adapting it for small or large work.

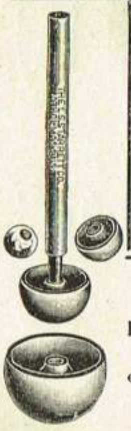
The auxiliaries designed to go with the Trammel Heads are as shown above, viz., inside and outside calliper legs, an extra pair of long points, a set of four ball points with holder, which enable one to scribe a circle from the centre of any hole up to 1½in. and under. A lead pencil may be used in place of either of the steel points. The clamping device is adapted to take in either a small or common-sized pencil. The Trammels are furnished with or without auxiliaries. Trammel Heads with one pair of points will be sent unless otherwise ordered.

1475A Gives a more detailed representation of one of the heads.

PRICES.

Trammel Heads (with 1 pair of points)	7/6
Balls and Holder, per set	4/6
Small Calliper Legs, per pair	2/-
Large ditto ditto	3/-
Large Divider Points, per pair ...	2/-

Ball Points, No. 88.



1476

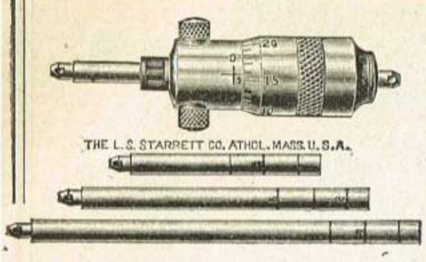
For Use with No. 85 or No. 90 Dividers and No. 51, No. 58, and No. 59 Trammels.

This attachment consists of four balls, of 1$\frac{9}{16}$in., 1in., ¾in., and ½in. diameter respectively, and a holder which fits either divider leg or trammel head. It is used to form a seat for the divider leg in describing circles around a hole

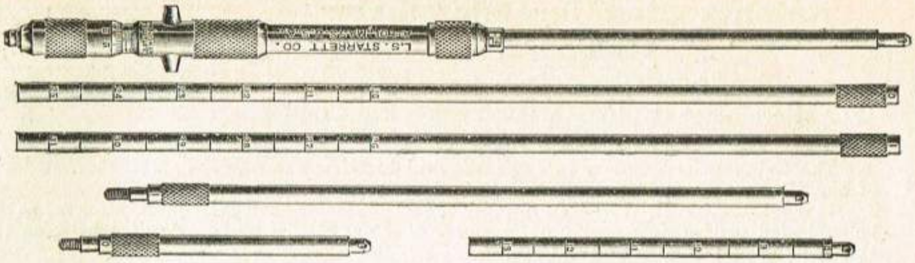
PRICES.

Complete, 4 Balls and Holder	4/6
Either Ball or Holder	1/- each

Starrett's Inside Micrometer, No. 120.



1477 Set A.



1479 Set C.

Both have screw and nut same as our Improved No. 3 Micrometer Calliper and read in thousandths. Set A measures from 2in. to 8in., has ½in. movement of screw and requires four extension rods. The rods are provided with a hardened steel adjustable anvil in ends, which permits adjusting for wear. A small binding screw locks rods when set. Rods are marked in ½in. divisions and set to a similar line on a projection of the barrel.

Set C is similar in all respects, with the exception that it measures from 8in. to 32in., with four extension rods, and has a lock for screw as well as rods; and has 1in. movement of the screw. This is a very strong and serviceable tool as well as an accurate one. We can furnish rods of extra lengths for these tools when desired.

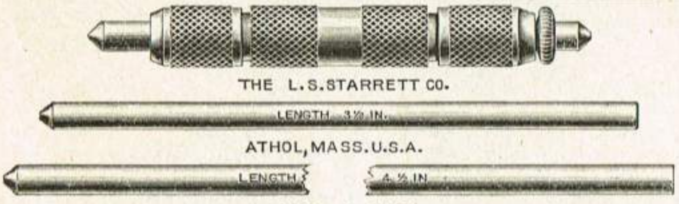
An auxiliary handle accompanies Sets A, B, and D, which is used by removing the nut opposite the lock nut and screwing the handle in place of same, thereby enabling one to take measurements in holes and other places where the micrometer could not otherwise be used.

PRICES.

1477	Set A.	With 4 rods, to measure from 2in. to 8in., in case	17/6 each.
1478	,, B.	,, 7 ,, ,, ,, 2in. ,, 12in., ,, ...	21/6 ,,
1479	,, C.	,, 4 ,, ,, ,, 8in. ,, 32in., ,, ...	25/6 ,,
1480	,, D.	Comprising sets A and C	41/6 ,,
		Handle, extra	2/- ,,

Extra Rods at 3d. per inch.

Starrett's Adjustable Calliper Gauge, No. 125.



1481 & 1482

Designed for internal measurements of large cylinders and of distances between uprights. The body of the tool is a steel tube provided with a binding chuck on each of its ends. Into one end is clamped a plain rod, that, when the chuck is loosened, can be easily adjusted to any approximate size. Into the other end is screwed a threaded anvil for fine adjustment. To set the gauge, loosen the chuck that clamps the wire rod, slide the rod out or into the required size, and clamp it. If not quite correct, loosen the chuck on the opposite end, and turn the anvil out or in what little is needed.

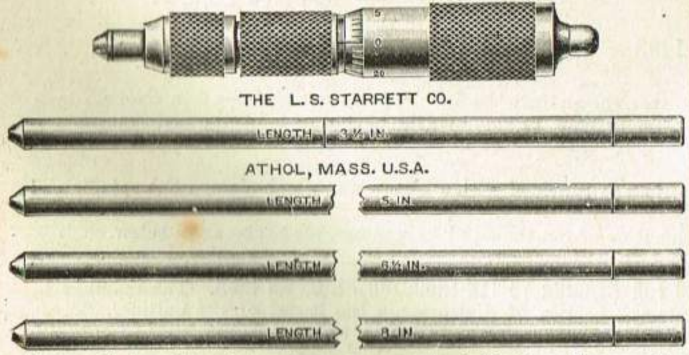
Made from steel throughout, and nicely finished.

PRICES.

1481	2½in. with three rods, capacity from 2½in. to 6¾in.	4/- each.
1482	6in. ,, ,, ,, ,, 6in. ,, 16in.	5/- ,,

The diameter of the steel rods is ·150in. Extra rods furnished at 1d. per inch.

Starrett's Micrometer Calliper Gauge, No. 126.



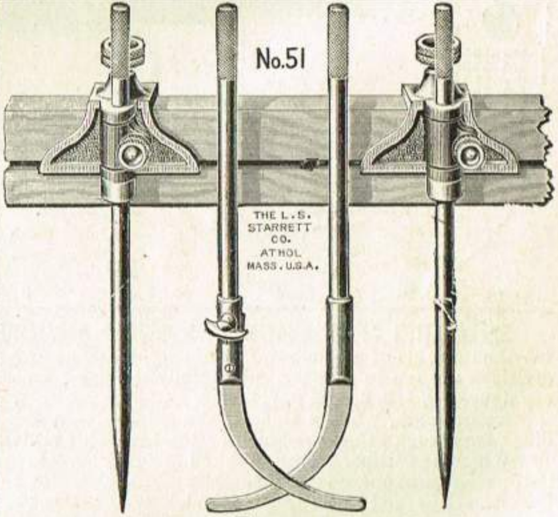
Designed for close internal measurements, indicating thousandths where a definite distance in inches is not essential. The body of the the tool is a steel tube, provided at one end with a binding chuck in which are fastened the plain rods, and it can quickly be adjusted to any approximate size. The other end has sleeve and body of barrel marked and graduated same as our No. 3 Micrometer Calliper, giving a reading in thousandths, and has ¼in. movement of screw. Anvil in end of sleeve is hardened, as are those in ends of rods.

PRICES.

1483	Capacity 2½in. to 10in. (with five rods) ...	8/-
	Leatherette case, extra	3/-

Extra rods at 1d. per inch.

Extension Beam Trammels, No. 51.



PRICES.

1484	Complete	13/-
	Without Calliper Legs ...	10/-

Sent complete unless otherwise ordered.

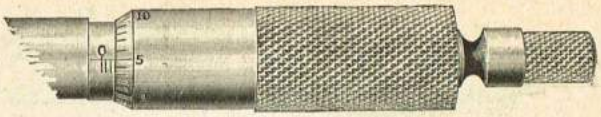
For Ball Points which may be used with this tool, see page 144.

Brown & Sharpe's Micrometers.

Ratchet Stop for Micrometer Callipers.

Patented November 6, 1894.

For Micrometer Callipers with Ratchet Stop, add 2/- to the regular price.

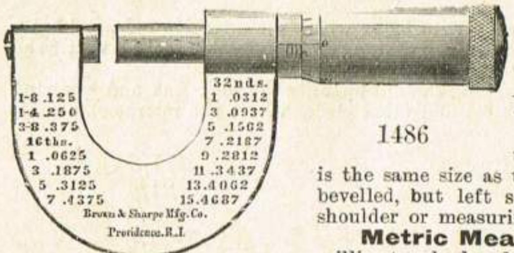


1485

The Ratchet Stop, shown full size attached to Micrometer Calliper Spindles, can be furnished with, or attached to, any of our Micrometer Callipers.

It is found convenient where a number of measurements have to be quickly taken, as it enables the objects measured to be subjected to the same degree of pressure. The size enables its being rolled between the thumb and finger, and facilitates the opening and closing of the Calliper.

A ratchet and pawl are combined, so that when closing the tool upon pieces to be measured, it can be closed repeatedly with an even pressure. If more than a certain degree of pressure is exerted, the ratchet will slip by the pawl and prevent the turning of the measuring spindle. In opening the tool, the pawl positively engages the ratchet so that it cannot slip by, thus making the Ratchet Stop positive in its return. With ordinary usage the device cannot get out of order; and, as both the ratchet and pawl are hardened, the wear is practically imperceptible.



1486

Micrometer Calliper, No. 4.

English or Metric Measure.

Patented January 22, 1884.

Price 18/6. With Ratchet Stop, 20/6. Morocco Case, 2/- extra.

This Calliper is shown full size in cut, and measures all sizes less than ½in. by thousandths of an inch. The outer end of the frame is the same size as the measuring spindle, and the edges of the measuring surfaces are not bevelled, but left square, thus making the Calliper especially useful for gauging under a shoulder or measuring small projections on a plain surface.

Metric Measure. This Calliper is also made to measure all sizes less than thirteen millimetres by hundredths of a millimetre. When so made, the table of decimal equivalents is omitted.

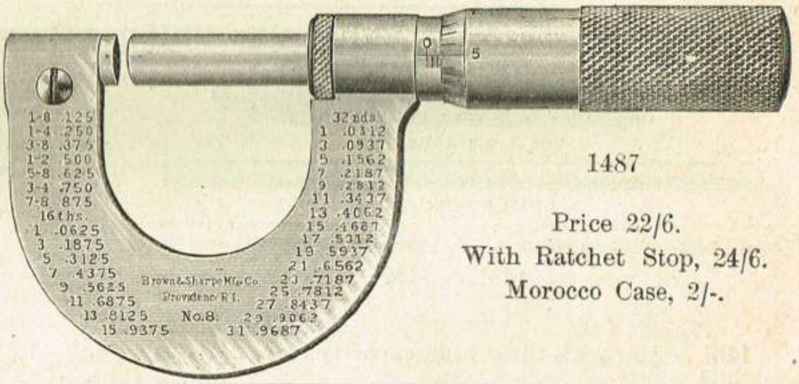
Micrometer Calliper, No. 8

English or Metric Measure.

Patented July 29, 1890.

This Micrometer Calliper is shown full size in cut, and measures all sizes less than 1in. by thousandths of an inch. The outer end of the frame is the same size as the measuring spindle; and as the edges of the measuring surfaces are not bevelled, but left square, it is convenient for gauging under a shoulder, or measuring a small projection on a plain surface.

Metric Measure. This Calliper is also made to measure all sizes less than twenty-five millimetres by hundreds of a millimetre. When so made, the table of decimal equivalents is omitted.

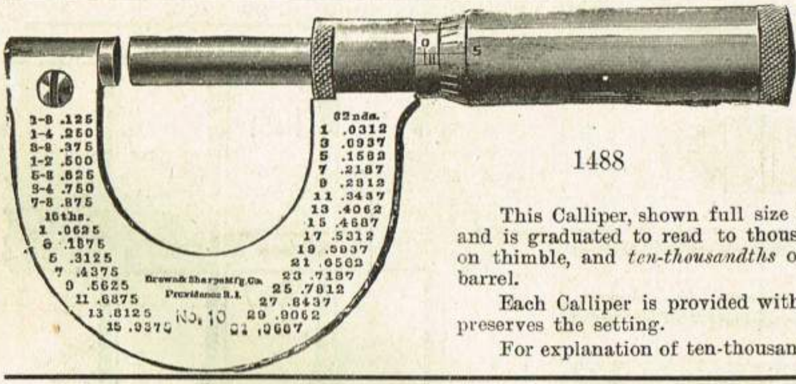


1487

Price 22/6.

With Ratchet Stop, 24/6.

Morocco Case, 2/-.



1488

Micrometer Calliper, No. 10.

Patented July 29, 1890.

Price 26/6.

With Ratchet Stop, 28/6.

Morocco Case, 2/-.

This Calliper, shown full size in cut, measures all sizes less than an inch and is graduated to read to thousandths of an inch by the divisions shown on thimble, and *ten-thousandths* of an inch by a Vernier on the front of barrel.

Each Calliper is provided with a clamp nut which clamps the spindle and preserves the setting.

For explanation of ten-thousandths readings, see explanation below.

EXPLANATION OF GRADUATION OF MICROMETER CALLIPERS FOR READING TO TEN-THOUSANDTHS OF AN INCH. The readings in ten-thousanhtds of an inch are obtained by means of a Vernier or series of divisions on the barrel of the Calliper. These divisions are ten in number, and occupy the same space as nine divisions on the thimble; and for convenience in reading, are figured 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

Accordingly, when a line on the thimble coincides with the first line on the Vernier, the next two lines to the right differ from each other one-tenth of the length of a division on the thimble; the next lines differ by two tenths, etc.

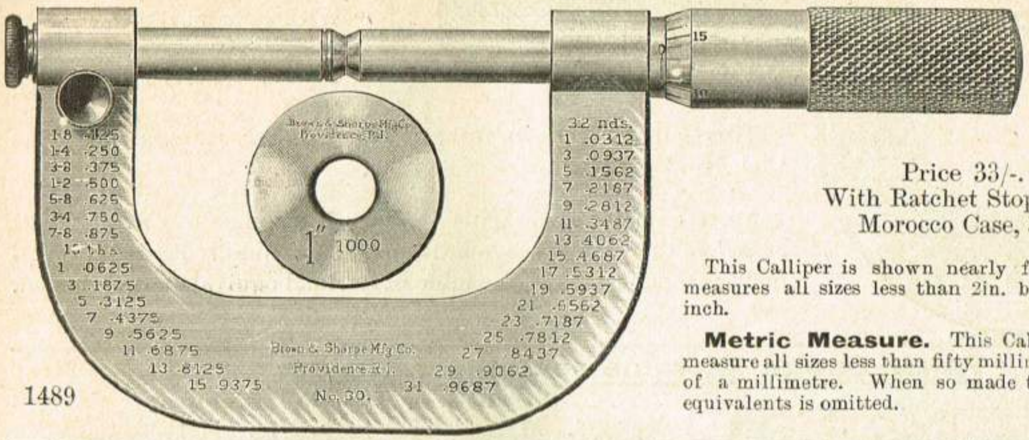
When the Calliper is opened, the thimble is turned to the left, and when a division passes a fixed point on the barrel, it shows the Calliper has been opened one-thousandth of an inch. Hence, when the thimble is turned so that a line on the thimble coincides with the second line (end of the first division) of the Vernier, the thimble has moved one-tenth of the length of one of its divisions and the Calliper opened one-tenth of one-thousandth, or one ten-thousandth of an inch. When a line on the thimble coincides with the third line (end of second division) of the Vernier, the Calliper has been opened two ten-thousandths of an inch, etc.

To read the Calliper, note the thousandths as usual, then the number of divisions on the Vernier, commencing at 0, until a line is reached with which a line on the thimble is coincident. If the second line, figured 1, add one ten-thousandth; if the third, figured 2, two ten-thousandths, etc.

Callipers graduated to ten-thousandths should not commonly be used where fine measurements are not required, as in an instrument of this class a wear is perceptible and important, which would be of comparatively slight consequence in a Calliper that reads only to thousandths.

Brown and Sharpe's Micrometers—*continued.*

Micrometer Calliper, No. 30.



1489

English or Metric Measure.

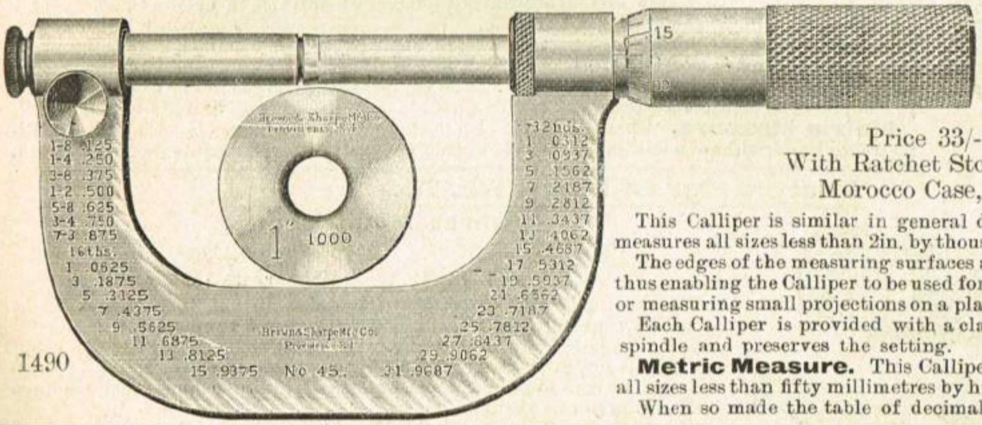
Patented
Jan. 22, 1884;
Aug. 16, 1887.

Price 33/-.
With Ratchet Stop, 35/-.
Morocco Case, 3/-.

This Calliper is shown nearly full size in cut, and measures all sizes less than 2in. by thousandths of an inch.

Metric Measure. This Calliper is also made to measure all sizes less than fifty millimetres by hundredths of a millimetre. When so made the table of decimal equivalents is omitted.

Micrometer Calliper, No. 45.



1490

English or Metric Measure.

Patented
Aug. 16, 1887;
March 31, 1896.

Price 33/-.
With Ratchet Stop, 35/-.
Morocco Case, 3/-.

This Calliper is similar in general design to the No. 10, and measures all sizes less than 2in. by thousandths of an inch.

The edges of the measuring surfaces are left practically square; thus enabling the Calliper to be used for gauging under a shoulder, or measuring small projections on a plain surface.

Each Calliper is provided with a clamp-nut which clamps the spindle and preserves the setting.

Metric Measure. This Calliper is also made to measure all sizes less than fifty millimetres by hundredths of a millimetre. When so made the table of decimal equivalents is omitted.

Micrometer Calliper, No. 46.

1491 Price 37/6. With Ratchet Stop, 39/6. Morocco Case, 3/-.

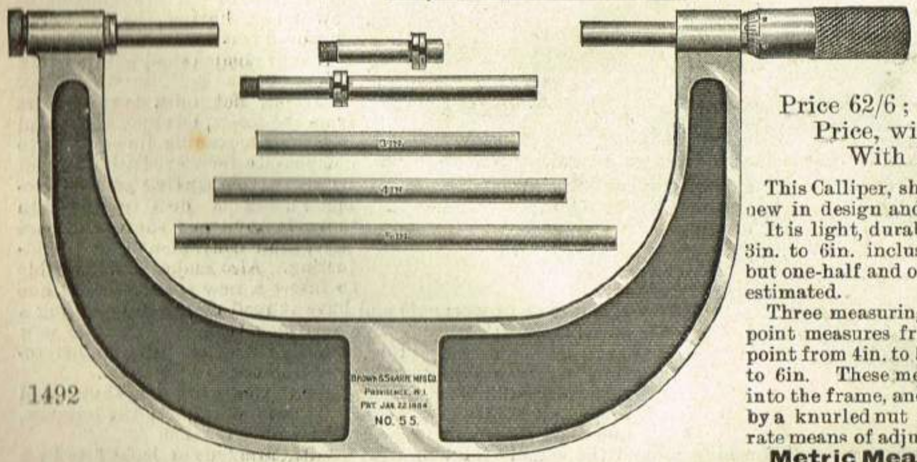
Patented August 16, 1887; March 31, 1896.

This Calliper differs from Micrometer Calliper, No. 45, English measure, only in being graduated to read to ten-thousandths as well as thousandths of an inch.

For explanation of ten-thousandths readings, see page 146.

A Standard Gauge, to be used in adjusting the Calliper, is furnished with each of the above.

Micrometer Calliper, No. 55.



1492

English or Metric Measure.

Patented January 22, 1884.

Price 62/6; With Ratchet Stop, 64/6.
Price, without Standards, 41/6.
With Ratchet Stop, 43/6.

This Calliper, shown about one-half size in cut is new in design and presents new features.

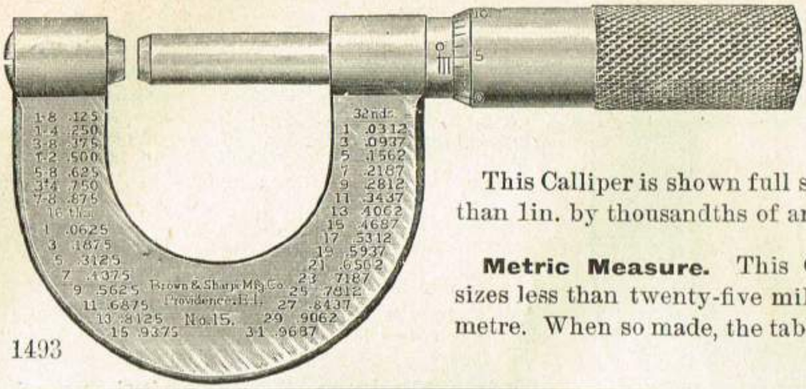
It is light, durable, and measures all sizes, from 3in. to 6in. inclusive, by thousandths of an inch, but one-half and one-quarter thousandths are easily estimated.

Three measuring points are furnished: The long point measures from 3in. to 4in., the intermediate point from 4in. to 5in., and the short point from 5in. to 6in. These measuring points are easily inserted into the frame, and are held solidly to their bearings by a knurled nut. Each point is provided with separate means of adjustment to compensate for wear.

Metric Measure. This Calliper is also made to measure all sizes less than one hundred and fifty and more than seventy-five millimetres by hundredths of a millimetre.

STANDARDS.—A set of three Standards (3in., 4in., and 5in.) for testing the accuracy of the adjustment of the Calliper is furnished when desired. Price per Set, 21/- Unless otherwise specified the Standards are sent with the Calliper.

Micrometer Calliper, No. 15.



1493

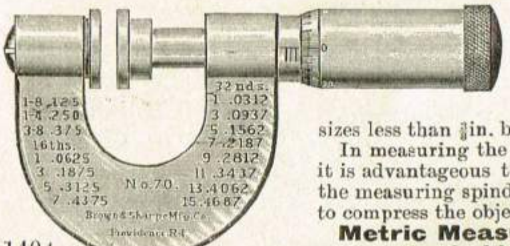
English or Metric Measure.

Price 20/-.
With Ratchet Stop, 22/-.
Morocco Case, 2/-.
Patented January 22, 1884.

This Calliper is shown full size in cut, and measures all sizes less than 1in. by thousandths of an inch.

Metric Measure. This Calliper is also made to measure all sizes less than twenty-five millimetres by hundredths of a millimetre. When so made, the table of decimal equivalents is omitted.

Paper Gauge Micrometer Calliper, No. 70.



1494

English or Metric Measure.

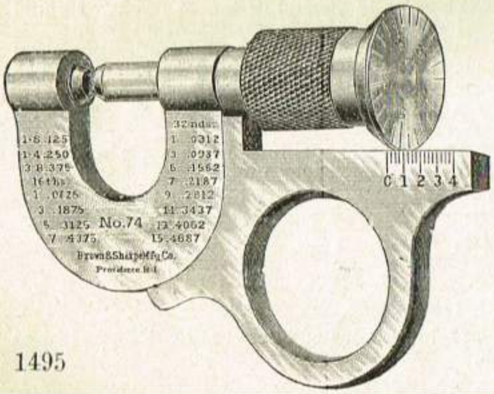
Price 22/6. With Ratchet Stop, 24/6. Morocco Case, 2/-.
Patented January 22, 1884.

This Paper Gauge Micrometer Calliper, or Micrometer Calliper with Large Measuring Surfaces, is shown full size in cut and measures all sizes less than ½in. by thousandths of an inch.

In measuring the thickness of paper, cardboard, sheet rubber, or other yielding substances, it is advantageous to use Micrometer Callipers provided with discs or washers on the ends of the measuring spindle and adjusting screw. The comparatively large sizes have less tendency to compress the objects measured, and enable accurate measurements to be quickly obtained.

Metric Measure. This Calliper is also made to measure all sizes less than nine millimetres by hundredths of a millimetre. When so made, the table of decimal equivalents is omitted.

Micrometer Calliper, No. 74.



1495

Sheet Metal Gauge.

Price 22/6. In Morocco Case, 24/6.
Patented July 18, 1882; January 22, 1884.

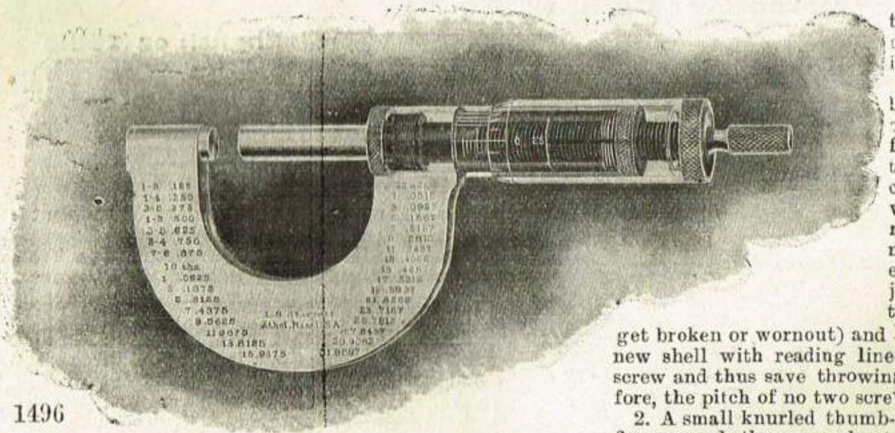
This Micrometer Calliper, shown full size in cut, is recommended as especially convenient for sheet metal workers and handlers.

It is readily held at right angles to the sheet to be measured by placing the middle finger of the right hand through the ring; the thimble can be operated by the forefinger and thumb of the same hand, and readings made while in this position.

The Calliper measures all sizes less than $\frac{4}{10}$in. by thousandths of an inch, but one-quarter and one-half thousandths are readily estimated.

To facilitate the reading of the Calliper while held in position, the thousandths readings are taken from the dial at the top of the spindle; and the twenty-five thousandths readings, or those corresponding to the readings on the barrel of an ordinary Micrometer Calliper, are taken from the scale at the top of the frame. The decimal equivalents stamped on the frame are convenient, and render possible the immediate expression of readings in 8ths, 16ths, 32nds, and 64ths of an inch.

Starrett's Micrometers.



1496

This illustration represents the interior view of our Micrometers as now made, having the following improved features:—

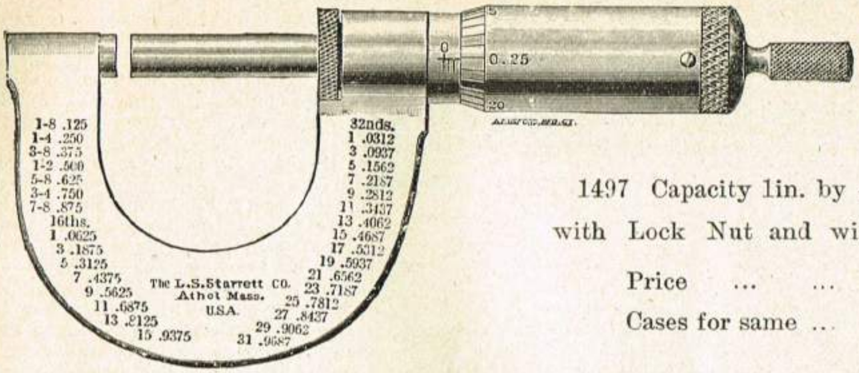
1. A graduated shell with reading line covers the split nut and shank of frame, not only keeping dirt from the screw, but may be rotated to bring the reading line correct to compensate for wear (using special wrench accompanying each Micrometer). This does away with movable anvil and supplies a more exact and convenient way of adjusting. Also makes it practicable to insert a new screw (should one get broken or wornout) and have it read correctly by adding a new shell with reading line on same to agree with the new screw and thus save throwing away the whole thing as heretofore, the pitch of no two screws being *exactly* the same.

2. A small knurled thumb-piece to rotate between thumb and finger speeds the screw about three to one, reduces the leverage, and a more sensitive and correct measure is taken.

3. A knurled locking-nut contracting a split bushing around the spindle takes up wear central and true or locks firm by a slight turn of the same, making a solid gauge when desired.

The above features are patented and controlled by us, excepting a licence sold one manufacturer to make the lock nut and speeded attachment only. The graduated shell for adjusting we control exclusively and now apply it to all our outside Micrometers.

L. S. Starrett Co.'s Micrometers.



L. S. Starrett's Micrometer, No. 3.

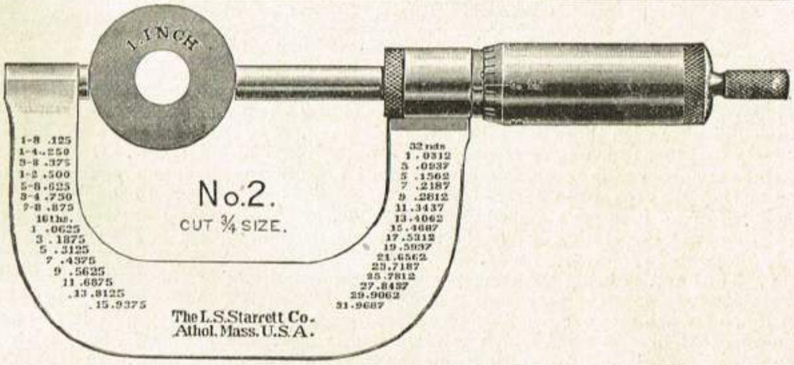
1497 Capacity 1in. by $\frac{1}{1000}$ths of an inch or $\frac{1}{100}$mm., with Lock Nut and with Ratchet.

Price	25/- each.
Cases for same	2/- „

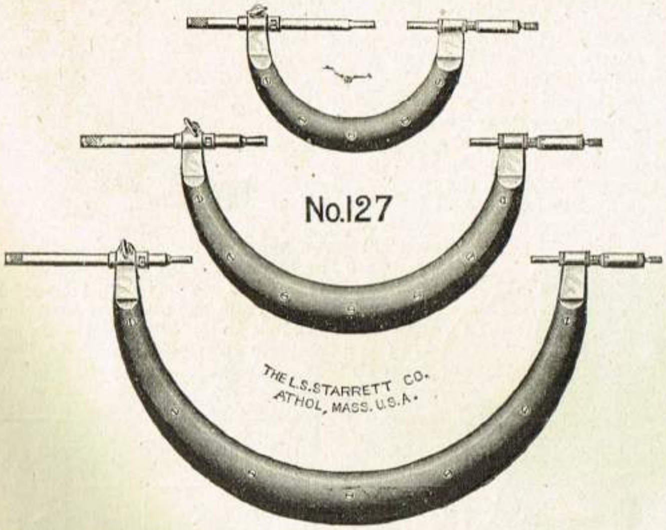
L. S. Starrett's Micrometer, No. 2.

1498 Capacity 1in. to 2in., by $\frac{1}{1000}$ths of an inch or $\frac{1}{100}$mm., with Lock Nut and with Ratchet.

Price	27/- each.
Cases for same ...	3/- „



No.2.
CUT ¾ SIZE.



No.127

L. S. Starrett's Micrometer Gauges, No. 127.

These Gauges were designed and made to meet the requirements of the Government in making big guns and other work in the Ordnance Departments of Government shops, where they are now used. The frames are cut from steel plates, nicely finished. The sides are covered with hard rubber, put on with brass screws, preventing inaccuracy through expansion caused by change in temperature when held in warm hands. The micrometer screw adjusts 1in., reading $\frac{1}{1000}$ths of an inch, and is provided with our patent lock nut. The tail spindle has fine graduation marks 1in. apart, and may be accurately set to sizes required within its scope. Contact ends of spindles are slightly convex to prevent catching on cylindrical work.

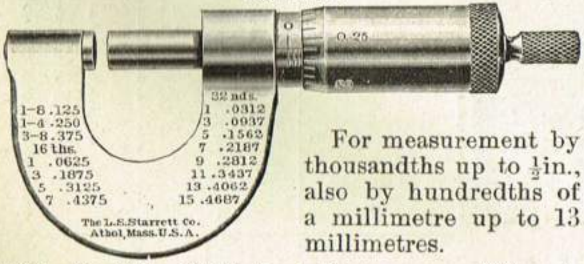
Prices.

1499	0in. to 4in.	£6 10s. 0d. each.
1500	4in. to 8in.	£9 17s. 6d. „
1501	8in. to 12in.	£13 0s. 0d. „

Corresponding sizes in Metric measure at the same prices.

Starrett's Speeded Screw Micrometers.

Half-Inch.

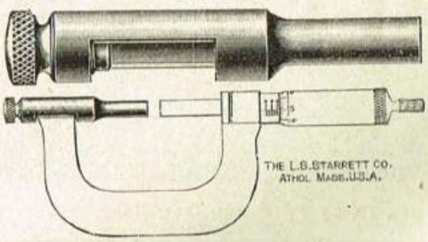


For measurement by thousandths up to ½in., also by hundredths of a millimetre up to 13 millimetres.

1502	No. 215	With Lock Nut ...	20/- each.
		Cases for same	2/- „
1503	No. 216	Without Lock Nut ...	18/6 „
		Cases for same	2/- „

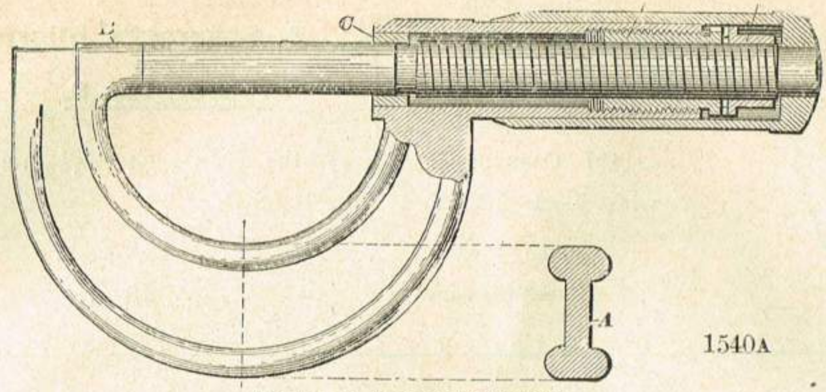
Either of these Gauges in Metric measures same prices.

Attachment for Two Inch Micrometers, No. 212.



1504 This Attachment, by means of which a 2in. micrometer may be instantly converted into a 1in. tool, will be furnished, when ordered, with No. 2 Micrometer. Price 8/- each.

Slocomb Improved Micrometer Callipers.

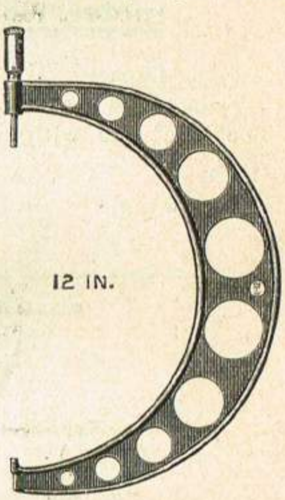


1540A

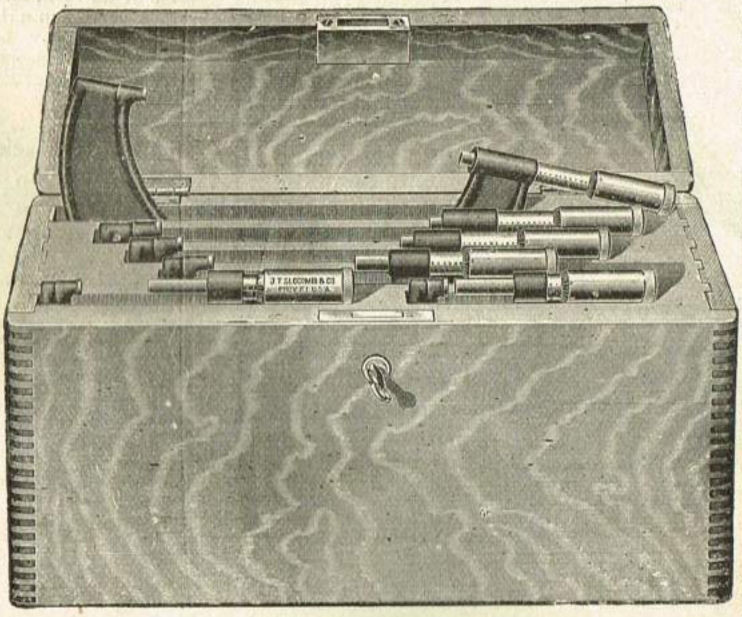
SECTIONAL VIEW OF CALLIPER.

THE makers of these Micrometer Callipers have recognised that these useful instruments would be much more generally adopted if they could be supplied at a more popular price than has usually been charged, and at the same time be kept accurate and reliable.

The line of Micrometers here described were designed with this object in view, and while being put on the market at a very moderate cost, they are thoroughly trustworthy tools, as the saving has been effected in the matter of finish rather than in anything essential to their efficiency in use. The bow or frame is a steel drop forging of the section shown, which gives great rigidity and affords a convenient hold for the fingers. The frame is not machined and polished, but is neatly japanned like an ordinary snap gauge. This method reduces the cost of manufacture, and provides a finish specially suitable for regular use. There are no decimal equivalents stamped on the frame, another system being adopted, which is certain to find favour by reason of its providing a ready means of comparing and checking the decimal sizes with those in more ordinary shop use. The reading line on the barrel is divided into forty divisions as usual, corresponding with the pitch of the screw. On the one side of the line these are grouped in fours, numbered from 1 to 10 in the usual way, and on the other side of the line they are grouped in fives, so indicating eighths of an inch. Decimal equivalents within one eighth of an inch are stamped on the thimble. By this method the tool can be set by eighths without any calculation or any reference to the decimal system, or it can be used just as readily by decimals in the regular way.



The anvil B being the same size as the screw and end of the frame makes the Calliper convenient for measuring very close to a shoulder. The anvil is also made higher than is usual to allow of reaching over a slight projection or into a recess. The anvil is formed by inserting a hardened tool-steel plug, which is permanently fixed and practically solid with the frame. All adjustments for wear are made inside the thimble as described later. The spindle moves through two bearings as shown, one being the main nut D, and the other the plain bushing C. Both of these are removable, so that they and the spindle can be renewed when badly worn, making the tool as accurate as when new. The main nut is solid, and has a long bearing, so that wearing is minimised, and a second nut E is provided for taking up the wear when it does take place. The two nuts are each furnished with fifty-six V-shaped teeth, which interlock and hold them in any relative position. In order to adjust for looseness in the threads it is necessary only to turn the screws out of the main nut D, and then turn nut E one or more teeth ahead as may be required. The principle is the same as that of the lock-nut, but not carried so far as to cause actual binding. It is preferable to any adjustment at right angles to the spindle, as no new surfaces are brought into contact. A light spiral spring is inserted between the two nuts so as to maintain a slight and uniform friction between screw and nut. The adjustment for wear on the anvil and spindle is equally well designed and mechanically correct, being arranged on the differential screw principle. The main nut D is screwed into the sleeve (a tight fit) with a thread 32 per inch. Its position can be changed by means of a spanner supplied, and the resulting movement of the spindle is equal to the difference in the two pitches; as a complete turn equals only $6\frac{1}{4}$ thousanths of an inch, the adjustment is very sensitive.



SET No. 19, IN POLISHED OAK CASE. CALLIPERS FROM 0 TO 6IN.

LIST OF SIZES.

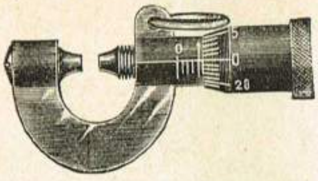
Maximum Size.	Range.	PRICE.
½ inch.	½ inch.	£0 15 0
1 ,,	1 ,,	0 17 6
2 ,,	1 ,,	0 17 6
3 ,,	1 ,,	1 5 0
4 ,,	1 ,,	1 7 6
5 ,,	1 ,,	1 10 0
6 ,,	1 ,,	1 12 6
7 ,,	1 ,,	1 13 9
8 ,,	1 ,,	1 15 0
9 ,,	1 ,,	1 16 3
10 ,,	1 ,,	1 17 6
11 ,,	1 ,,	1 18 9
12 ,,	1 ,,	2 0 0

Prices of Slocomb's Micrometers in Sets.

No. 18. Set of Callipers, 1, 2 and 3in., in Morocco Leather Case, £3.
No. 19. Set of Callipers, 1 2, 3, 4, 5 and 6in., in Polished Oak Case, £9.

Continental-made Micrometer and other Gauges.

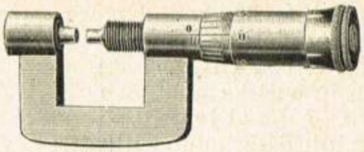
Special Line.



1505 & 1506

1505	To Measure ¼in. by 500ths	...	4/6 each.
1506	To Measure ½in. by 500ths	...	6/6 „

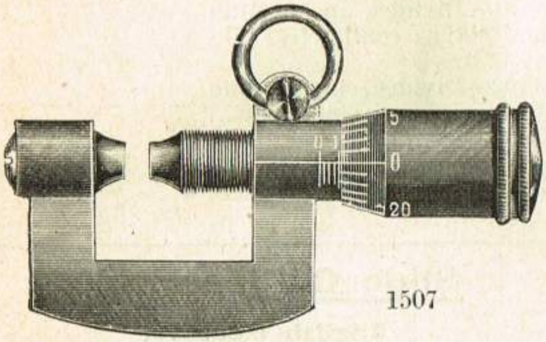
Light Micrometer.



1508

To Measure by 1,000ths inch up to	⅜	½	¾in.
Price	5/6	6/-	6/6 each.

Micrometer with Clamp Screw.

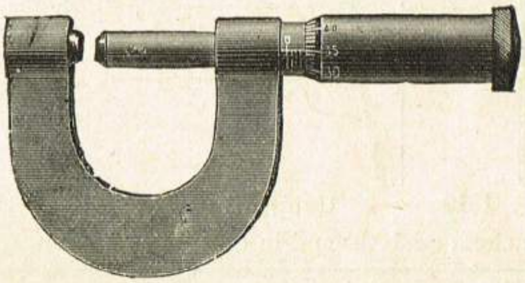


1507

This pattern is stronger than No. 1508.

To Measure by 1,000ths inch up to	¾	1	1⅜in.
Price	8/6	9/6	11/6 each.

Best Quality Steel Micrometer.



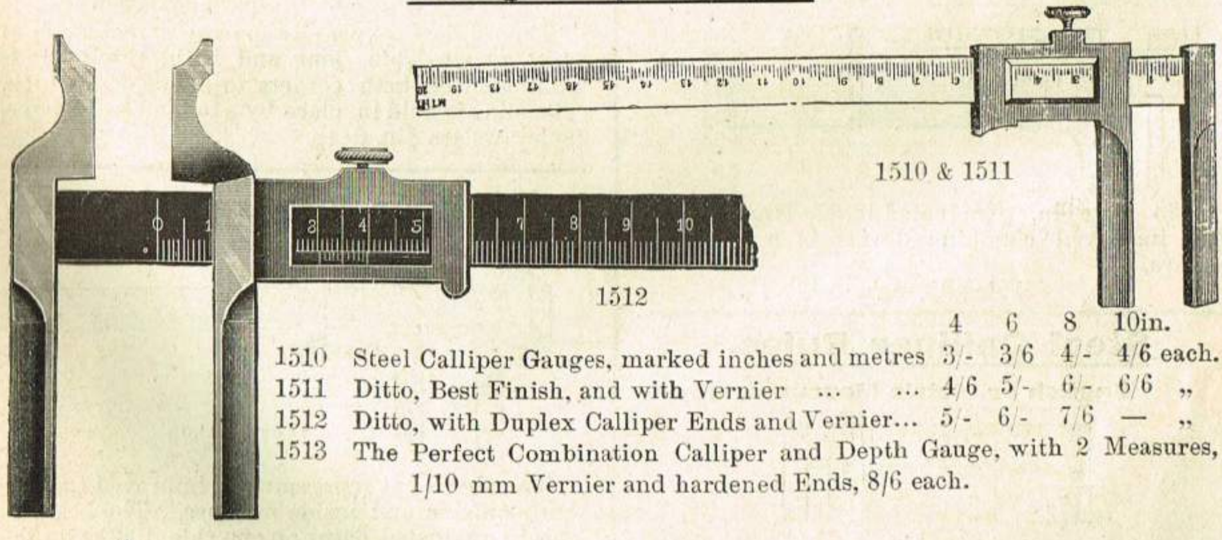
1509

These are made on the American principle, and their accuracy guaranteed.

To Measure by 1,000ths inch

up to	½	¾	1	1⅜in.
Price	11/6	12/6	14/6	20/- each.

Sliding Calliper Gauges.

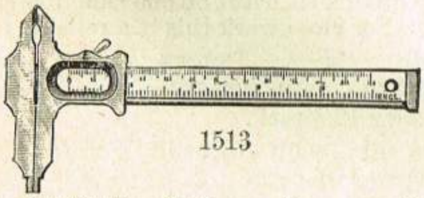


1510 & 1511

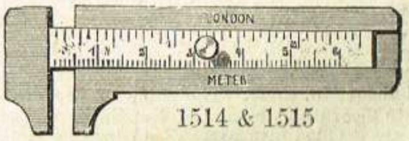
1512

		4	6	8	10in.
1510	Steel Calliper Gauges, marked inches and metres	3/-	3/6	4/-	4/6 each.
1511	Ditto, Best Finish, and with Vernier	4/6	5/-	6/-	6/6 „
1512	Ditto, with Duplex Calliper Ends and Vernier...	5/-	6/-	7/6	— „

1513 The Perfect Combination Calliper and Depth Gauge, with 2 Measures, 1/10 mm Vernier and hardened Ends, 8/6 each.



1513



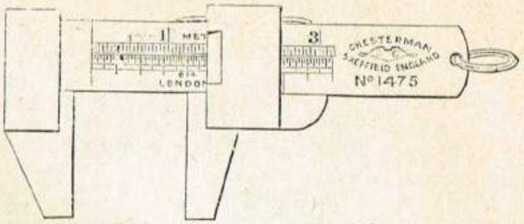
1514 & 1515

			2⅜	4in.
1514	Pocket Sliding Callipers, Brass, marked inches and metres	... ...	2/-	2/6 each
1515	Ditto ditto German Silver	...	2/6	3/- „

Chesterman's Steel Calliper Gauges.

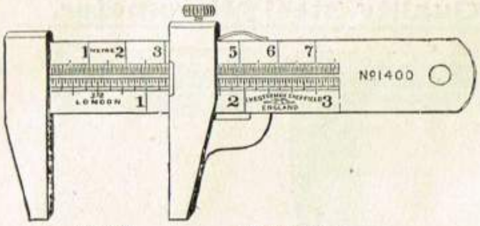
This is a handy little Gauge for use in light work. Very small and portable. A split ring is provided for attaching to the watch-chain.

	$1\frac{1}{4}$	2	3in.
1516 No. 1465—Divided on one side, inches into 32nds and circumference measure into 16ths … …	3/-	3/6	4/- each.
1517 No. 1466—Divided on one side, inches into 64ths and 50ths …	3/-	3/6	4/- ,,
1518 No. 1475—Divided on one side, inches into 64ths and centimetres into millimetres and halves … …	3/-	3/6	4/- ,,



1518 Full Size.

Chesterman's Steel Calliper Gauges.

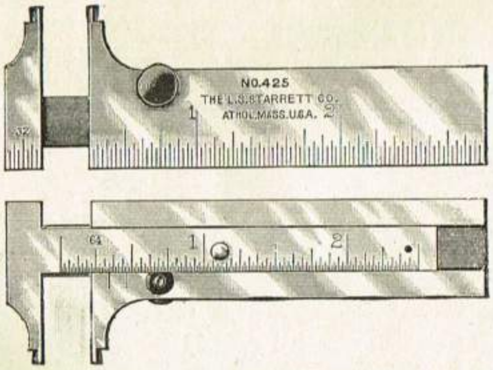


1519 Half Size

This is a very handy little instrument for Machinists and Tool-makers.

	3	4	6in.
1519 No. 1400—Divided, inches into 32nds, centimetres into millimetres and halves … … … … … …	5/-	5/6	6/- each.
1520 No. 1401—Divided, inches into 32nds, 48ths, and 50ths; centimetres into millimetres and halves … … …	6/-	6/6	7/- ,,
1521 No. 1402—Divided, inches into 32nds, circumference measure into 16ths…	5/-	5/6	6/- ,,
1522 No. 1404—Divided, inches into 32nds, and centimetres into millimetres and halves; also showing circumferences in inches and 16ths and in centimetres and millimetres … … … … …	6/-	6/6	7/- ,,

Starrett's Pocket Slide Calliper, No. 425.

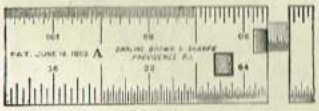


1523 Size 3in. Graduated in 32nds and 64ths. The improved clamping device is a valuable feature.

Price 8/- each.

Steel Calliper Rules.

English or Metric Measure.



1524

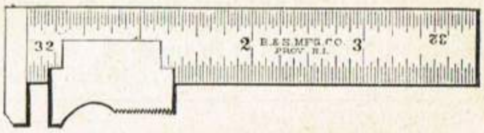
1524 No. 360, 3in. … … 8/- each.
1525 No. 361, 4in. … … 10/- ,,

These Rules are made in two sizes, 3in. and 4in. when closed, and about $\frac{1}{8}$in. thick. The Slide of the 3in. can be drawn out to measure $2\frac{1}{4}$in., and of the 4in. to measure $3\frac{1}{4}$in. The Rules are divided into parts of an inch as follows:

	A	B	C	
1st cor.	8, 14, 28	8, 14, 28	8	8
2nd cor.	12, 24, 48	12, 24, 48	16	16
3rd cor.	16, 32, 64	16, 32, 64	32	32
4th cor.	20, 50, 100	20, 50, 100	64	64
Slide	64 & 32	64 & 100	32 & 64	64 & 100

Slide Calliper Rule.

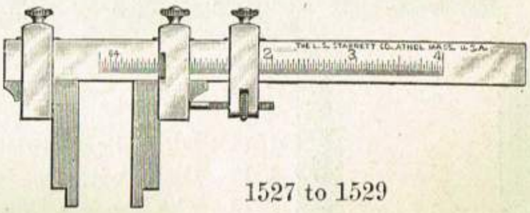
English Measure.



1526 No. 365. Price 5/3. each.

The Slide Calliper Rule, shown in cut, is of steel, about $4\frac{3}{16}$in. long and $1\frac{1}{16}$in. thick. It is graduated on both corners to 32nds of an inch. The slide is held in place by a tongue and groove. The jaws are $\frac{3}{8}$in. deep.

Calliper Square, No. 25.



1527 to 1529

The above cut represents an improved tool for both outside and inside measure. The beam is nicely graduated, 64ths on one side, 100ths on the other. For close work this is a reliable tool.

PRICES.

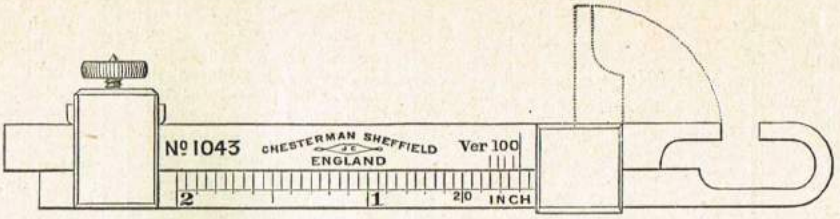
1527 3in., with Adjusting Screw 14/6, without Screw 12/6 each.

1528 4in., with Adjusting Screw 16/6, without Screw 14/6 each.

1529 6in., with Adjusting Screw 22/6, without Screw 20/6 each.

In Leatherette Case, 3/- extra.

Chesterman's Boiler Plate Gauge.



(Full Size.)

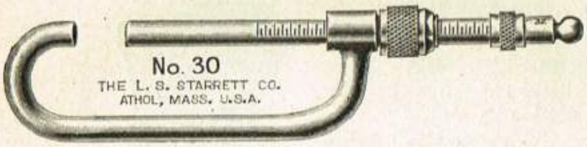
This is a useful little Tool for determining the thickness of metals in positions where the ordinary Gauge cannot be applied.

It is designed, more especially, for taking the thickness of a plate in a boiler near a hole.

Insert the Gauge through the hole, and lift it over the burr on the edge, close the jaws, and while in this position tighten the screw. The loose jaw may then be turned back, enabling the Gauge to be withdrawn without releasing the screw, and the dimensions are read off the sliding bar, which has Vernier attachments.

1530 No. 1043. With Vernier reading to 100ths of an inch one side, and 10ths of a millimetre other side, 6/- each.

Starrett's Boiler Plate Gauges.



1531

1531 This gauge was designed for measuring the thickness of ship plates, boiler plates, etc., where measure had to be taken through a bolt hole, or hole drilled for the purpose.

The illustration shows the shape of the hook end when inserted through a hole The contact point is carried in beyond any burr formed by drilling, insuring correct measurement.

The slide measuring rod is graduated on two opposite sides, one side reading 32nds, the other 40ths. Reading from the top of the knurled friction slide, which, after the contact ends of the gauge are brought together against the thing being measured, is slipped down against the top, the graduations above it show the exact measure. Then the measuring rod may be instantly withdrawn, the hook part removed and all taken to the light, and the correct measure indicated above the friction slide easily read.

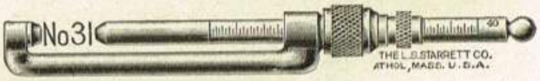
The knurled nut over the split hub serves to contract same to fit close on the slide or to lock firm, making a solid gauge, convenient for any mechanic.

The gauge weighs about 1 ounce and is adapted for the vest pocket. Width, 1in. Capacity $1\frac{7}{8}$in.

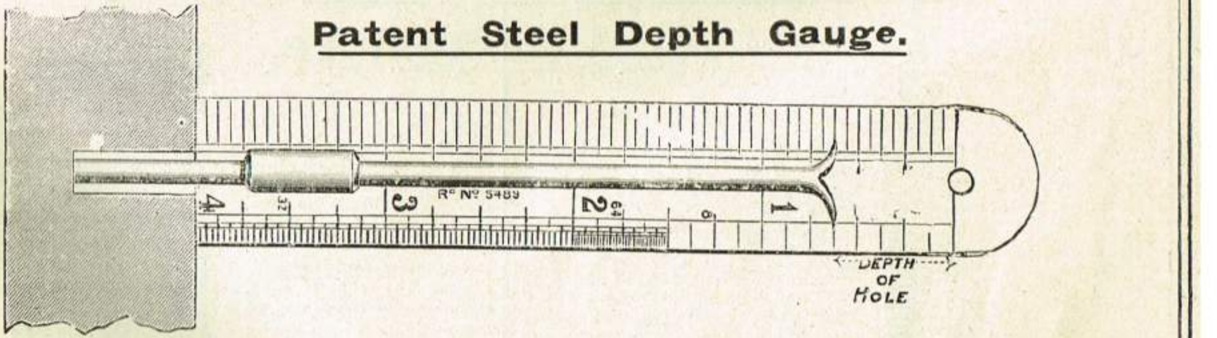
Price ... ... 8/- each.

1532 This gauge is similar to No. 30, but is made narrower for use in smaller holes. Width $\frac{7}{16}$in. Capacity, $1\frac{13}{16}$in.

Price ... ... 8/- each.

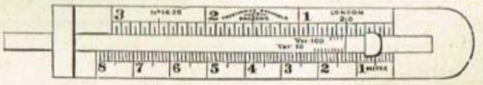


Patent Steel Depth Gauge.



1533 4in. Steel Blade and Sliding Index Bar, marked inches in 8, 16, 32 and 64ths, $\frac{3}{4}$in. wide, 1/6 each.
1534 6in. " " " " " " $\frac{3}{4}$in. wide, 2/- "
1535 12in. " " " " " " $1\frac{1}{8}$in. wide, 2/6 "

Chesterman's Depth Gauge for Engineers.



$\frac{1}{2}$ size.

For Measuring Depths of Holes, Recesses, etc.

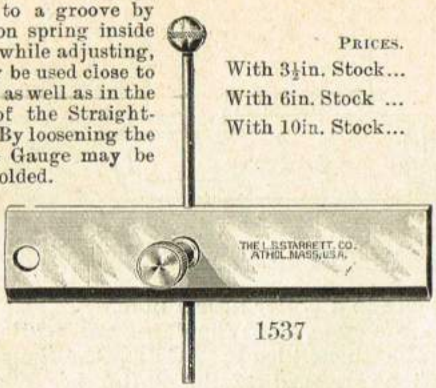
The Slide and one side of the gauge are marked to read by Verniers to 100ths of inches and 10ths of millimetres. The other side is marked to be used as a rule, in inches and 64ths and millimetres and halves.

1536 4in. long by $\frac{3}{4}$in. wide, in Leather Case, 5/- each.

Starrett's Depth Gauge, No. 45.

The wire in this Gauge is held to a groove by a friction spring inside the nut while adjusting, and may be used close to the end, as well as in the middle of the Straight-edge. By loosening the nut, the Gauge may be neatly folded.

PRICES.	
With 3½in. Stock... ...	3/-
With 6in. Stock	4/6
With 10in. Stock... ...	5/3

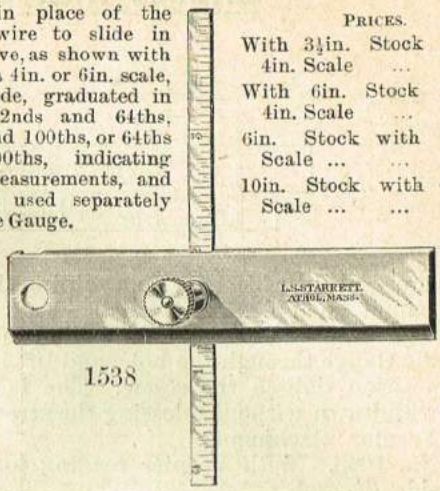


1537

Starrett's Depth Gauge, No. 46.

Has in place of the round wire to slide in the groove, as shown with No. 45, a 4in. or 6in. scale, $\frac{3}{16}$in. wide, graduated in either 32nds and 64ths, 50ths and 100ths, or 64ths and 100ths, indicating exact measurements, and may be used separately from the Gauge.

PRICES.	
With 3½in. Stock and 4in. Scale	5/-
With 6in. Stock and 4in. Scale	6/-
6in. Stock with 6in. Scale	7/-
10in. Stock with 6in. Scale	9/-



1538

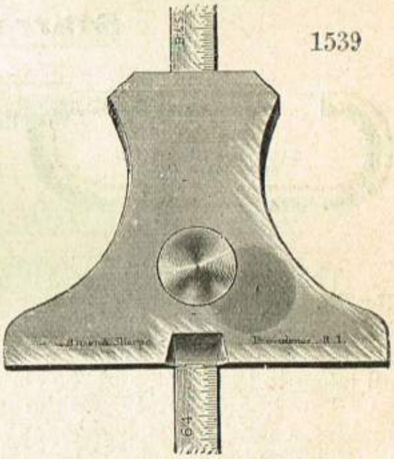
Rule Depth Gauge.

The 6in. Rule Depth Gauge shown, head full size together with portion of Rule, in illustration, has been designed with a view of furnishing a tool which is at once both durable and convenient.

The Head is a solid piece of steel, hardened, ¼in. thick, and 2in. long, of such form that it can be conveniently held while taking measurements. It is milled to receive the Rule or blade, which slides in a slot in back of head. The front of the head is bevelled back, as shown, to the width of the rule, thus greatly facilitating the reading of the graduations.

The Clamping device is made in such a manner, that by tightening the screw shown on front of head, the Rule or blade is clamped upon both edges and held centrally and firmly in place.

The blade is a 6in. Narrow Tempered Steel Rule, about $\frac{7}{32}$in. wide, and about $\frac{1}{20}$in. thick, can be easily and quickly detached from the head and used as an ordinary scale. The blade or rule furnished with the head, is divided into 64ths of inches on one side and 100ths on the other. Price 5/3 each.



1539

Micrometer Depth Gauge, No. 810.

English Measure.

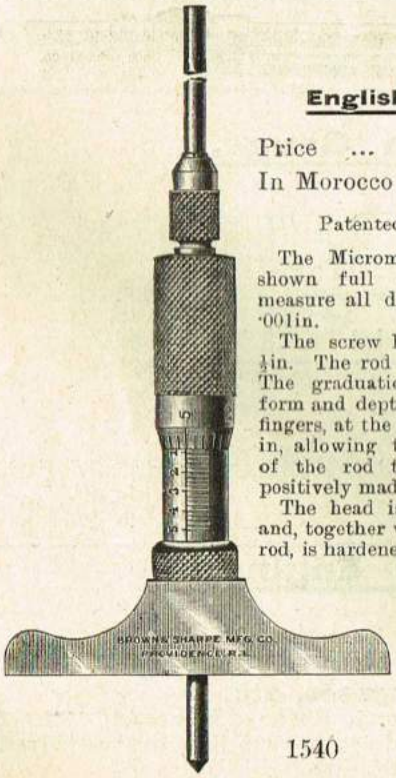
Price ... ... 18/6 each.
In Morocco Case 20/6 „

Patented Jan. 11, 1898.

The Micrometer Depth Gauge, shown full size in cut, will measure all distances to 2½in. by ·001in.

The screw has a movement of ½in. The rod is graduated in ½in. The graduations are of such a form and depth that the clamping fingers, at the end of gauge, spring in, allowing the ½in. adjustments of the rod to be quickly and positively made.

The head is about $\frac{7}{16}$in. thick, and, together with the point of the rod, is hardened.



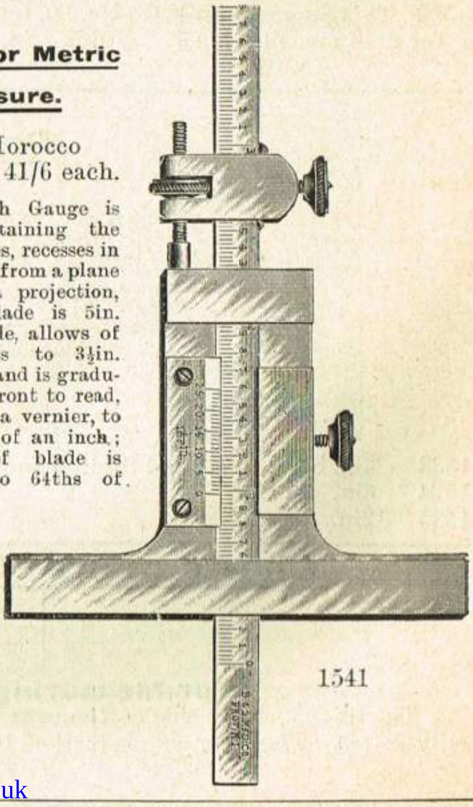
1540

Depth Gauge, No. 714.

English or Metric Measure.

Price, in Morocco Case... 41/6 each.

This Depth Gauge is used in obtaining the depth of holes, recesses in dies, distance from a plane surface to a projection, etc. The blade is 5in. long, ¼in. wide, allows of measurements to 3½in. being made, and is graduated on the front to read, by means of a vernier, to thousandths of an inch; the back of blade is graduated to 64ths of an inch.

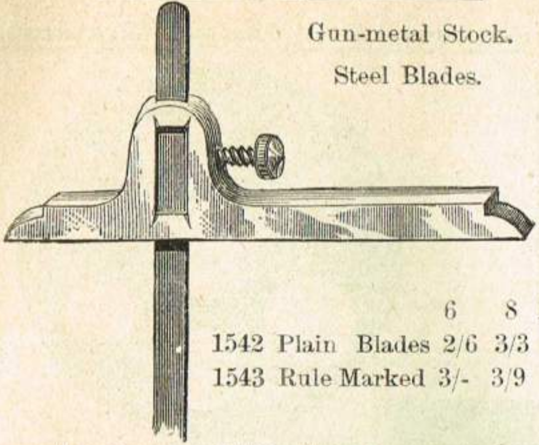


1541

Depthing Squares.

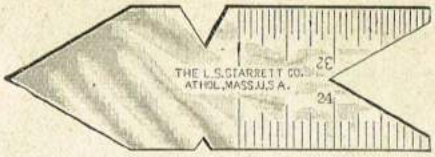
Gun-metal Stock.

Steel Blades.



	6	8	10in.
1542 Plain Blades	2/6	3/3	4/-
1543 Rule Marked	3/-	3/9	4/6

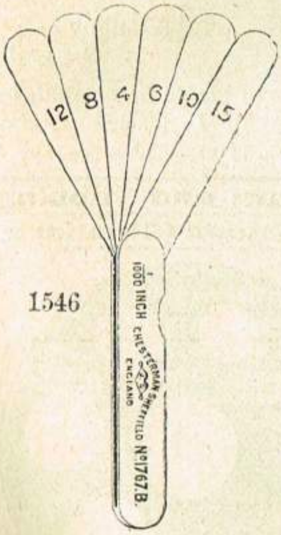
Centre Gauges.



1544 Graduated one corner each in 32nds, 24ths, 20ths, and 14ths, 60° 1/- each.

1545 Ditto ditto Whitworth 55° 1/- each.

Chesterman's Steel Feeler Gauges for Engineers, etc.

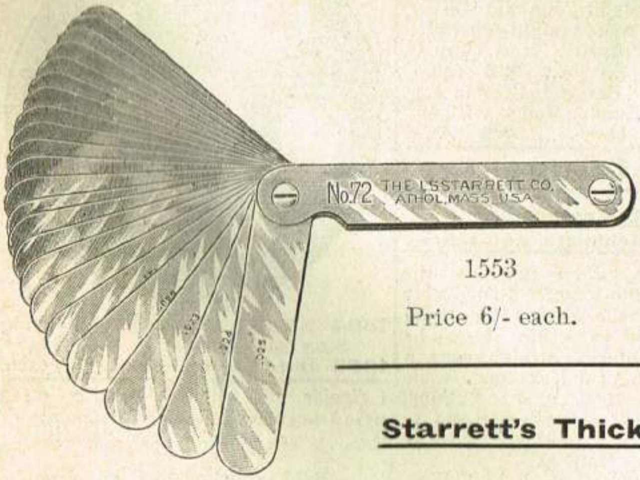


1546

HALF-SIZE.

1546	No. 1767B Tempered Steel Blades, engraved with the thickness in thousandths of an inch. The blades fold into a steel case similar to a pocket-knife. (See Illustration.)	2/- each.
1547	No. 1767A Same as above, but blades not engraved	1/6 ,,
1548	No. 1767 Ditto ditto and without steel case ...	1/- ,,
1549	No. 1770B Same as 1767B, but with two additional blades, viz., two and three thousandths of an inch	2/6 ,,
1550	No 1769 Same as 1767B, but blades 4in. long and tapering in width. The case divided into inches and 16ths on one side, and centimetres and millimetres on the other side	3/- ,,
1551	No. 1870 Same as 1769, but with two additional blades, viz., two and three thousandths of an inch	3/6 ,,
1552	No. 1871 Same as 1870, but the case divided into inches and 16ths one side, and inches to 10ths, 20ths, and 50ths on other side	3/6 ,,

Starrett's Thickness Gauge, No. 72.



1553

Price 6/- each.

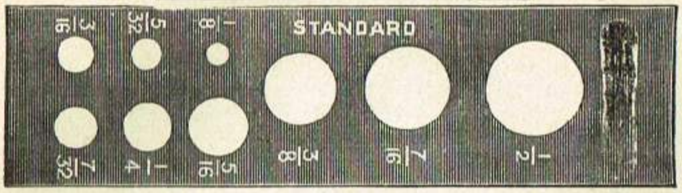
1553 This Gauge has 22 leaves, varying in thickness by thousandths, running from ·004 to ·025. The thickness of each leaf is designated by the number upon it. Each leaf may be used singly or in combination with others, and any thickness in thousandths within their limits may be quickly obtained. The leaves fold within the case, which is 2¾in. long, a convenient size to carry in the pocket.

Starrett's Thickness Gauge, No. 172.

1554 This Thickness Gauge has 8 leaves, viz., ·002, ·003, ·004, ·006, ·008, ·010, ·012, ·015. The leaves are tempered, and have the thickness marked upon them.
Size of case, 3⅜in. long, ½in. wide; leaves 3$\frac{1}{16}$in. long, ½in. wide. Price 4/- each.

Hardened Steel Gauges.

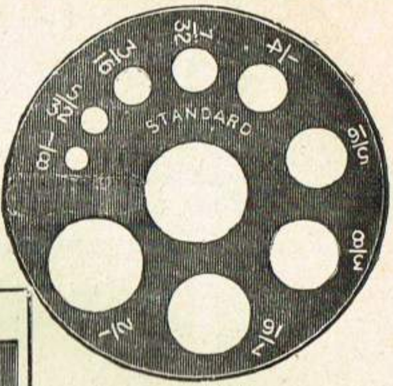
Standard Drill Gauge.



1555

1555 No. 2400—Standard Sizes ... ... 1/6 each.
1556 No. 2401—Tapping ditto ... ... 1/6 „

Standard Drill Gauge (Circular).

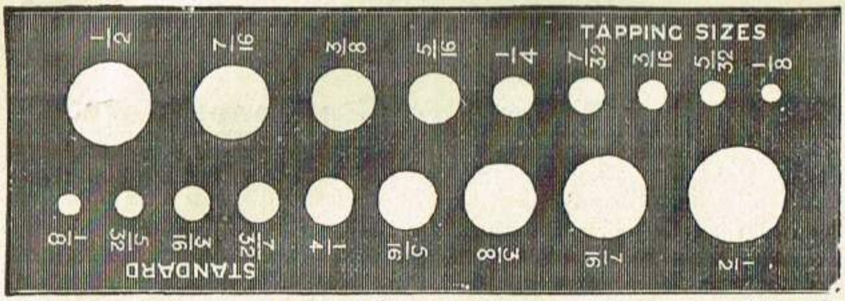


1562

1562 No. 2403—Standard Sizes ... ... 2/3 each.
1563 No. 2404—Tapping Sizes ... ... 2/3 each.

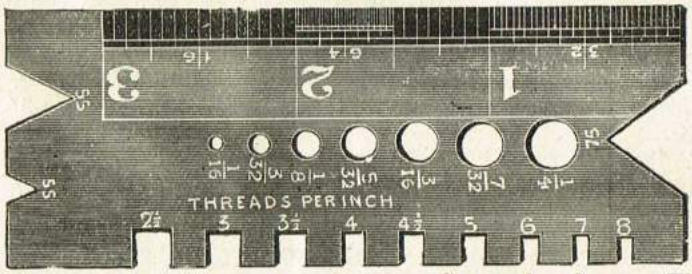
Either of above Gauges can be supplied in Lancashire make, and with 11 sizes, at 2/9 each.

Standard and Tapping Gauge.

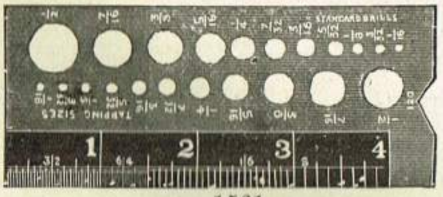


1557 No. 2402—Standard and Tapping Sizes combined ... 3/6 each.

"Handy" Gauge.



1558 No. 2407—Standard Drill Sizes, Gauge for Square Threads per Inch, and Gauge for **V** Threads ... ... 5/- each.



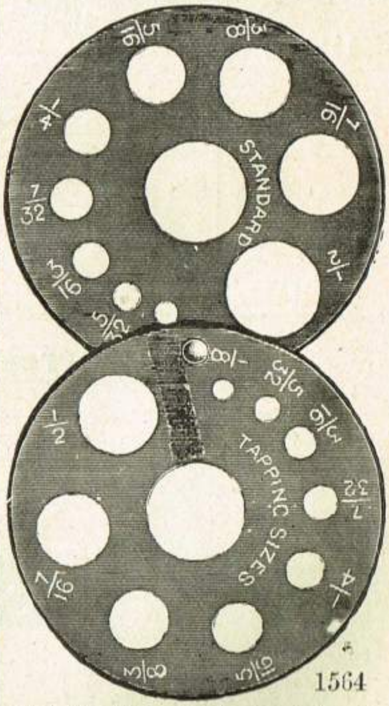
1561

1559 The "Handy" Tapping Gauge, with 3in. Rule and Straight-edge, and containing correct Tapping Sizes from $\frac{1}{16}$in. to $\frac{1}{2}$in. (11 sizes) ... **2/6** each.

1560 The "Handy" Standard Gauge, with 3in. Rule and Straight-edge, with correct Standard sizes from $\frac{1}{16}$in. to $\frac{1}{2}$in. (11 sizes) ... ... **2/6** each.

1561 The "Handy" Combination Standard and Tapping Gauge, with 4in. Rule and Straight-edge... **4/9** each.

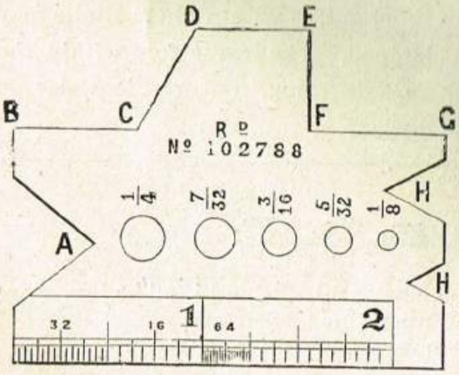
Standard and Tapping Drill Gauge (Circular).



1564

1564 No. 2405—Standard and Tapping Sizes combined ... ... **4/6** each.
1565 Ditto, Lancashire make **5/6** each.

The "John Bull" Pocket Gauge.



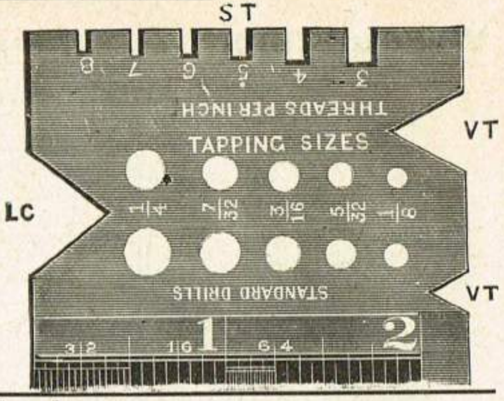
Invaluable to Engineers, Machinists, and others.

1566 The "John Bull" is the cheapest and most useful Gauge ever offered to the trade, serving three times the purpose of any other. It can be used as a Rule, a Straight-edge, a Centre Gauge, A; 2 Hexagons (inside and outside), B, C, D, E; 2 Squares (inside and outside), D, E, F, G; 2 Screw-cutting Tool Gauges, H, H; 1 Angle Gauge for grinding the points of Drills, B, C, D; 5 Drill and Wire Gauges. It can also be used for Setting Tools for Screw Cutting.

These Gauges are made of Fine Steel, are light, small, strong, and durable, and the greatest care is bestowed upon their manufacture, so as to ensure perfect accuracy—which is guaranteed.

Price ... ... 3/6 each.

The Engineers' Universal Pocket Gauge.

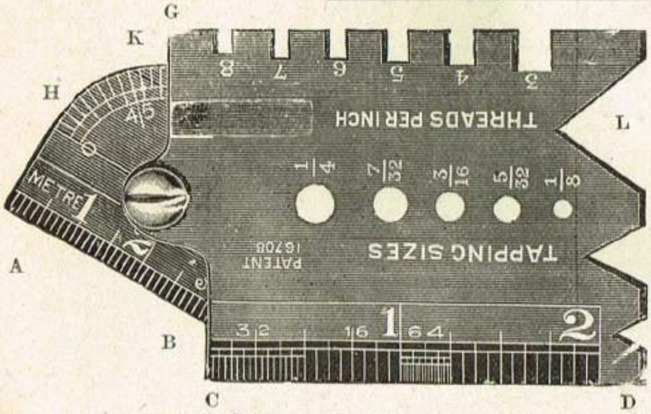


1567 The Engineers' Universal Pocket Gauge serves twenty-two purposes. It contains the best and latest improvements, and is equally useful to the amateur and practical mechanic, as the following description of its various uses will show :—

It consists of a Rule and Straight-edge on its bottom side ; the angle L C is 75 deg., being the most suitable angle for Lathe centres ; those marked V T are 55 deg., being the proper angle for cutting **V** thread screws ; the six gauges on the top side, marked S T, are the proper widths for making tools for cutting square threads of the various sizes—the figures will show the number of threads per inch ; the holes down the centre are 5 standard drill sizes and 5 tapping drill sizes, which will be found most useful to all engaged in mechanical pursuits.

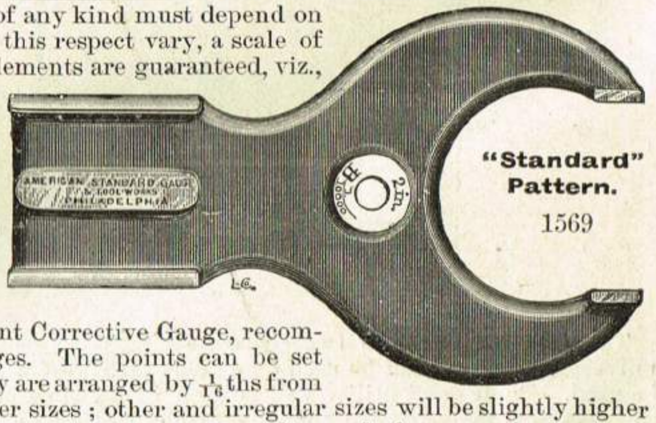
Price, **4/6** each.

The "Very" Gauge for Engineers.



1568 This Guage is designed to supply a want felt in the Engineering Trade, as its new and patented improvements will show. It consists of two unequal size plates, one of which serves as an ordinary sector combined with a French Rule. The larger plate, as may be seen by reference to the accompanying diagram, contains on the top side six openings, of the several widths suitable for making tools for cutting Square Threads, the number of threads per inch being marked against each opening. Down the centre of the plate are holes of the sizes required for making drills for Tapping purposes. The V-shaped opening on its end marked L is an angle of 75 deg., and is suitable for turning Lathe Centres ; those marked E E are angles of 55 deg., and are useful for making tools to cut screws with **V** threads. The two plates are united by a screw, which forms an axis on which the smaller one can be made to turn, and can be used to tighten the plates as required ; the smaller plate can be used as an ordinary sector for setting out angles of any number of degrees ; also for obtaining the rake of the tool when screw cutting. When the two lines marked H G are together, the two straight edges, A B, C D, are at right angles with each other, then when turned to the angle required (as seen above), the sector will register the number of degrees by the lines K. Price **6/6** each.

Betts' "Standard" External and Internal Gauges.


AMERICAN STANDARD GAUGE & TOOL WORKS PHILADELPHIA
2in.
L.G.

"Standard" Pattern.

1569

The expense of preparing gauging implements of any kind must depend on the accuracy attained, and as the requirements in this respect vary, a scale of precision has been adopted within which our implements are guaranteed, viz., $\frac{1}{10000}$th part of an inch. All Implements are adjusted at 75deg. temperature.

These Gauges are made of a fine quality of moulded steel, with the points and heels carefully hardened ; the heels seldom wear enough to require adjustment, but in case of such wear the gauges should be returned to be expanded and re-ground.

Their points are not rounded, but have a parallel fit from $\frac{1}{8}$in. to $\frac{3}{4}$in. in length ; they should be inspected at regular intervals and tested by our Patent Corrective Gauge, recommended to accompany every set of Calliper Gauges. The points can be set by careful hammering when disturbed by use. They are arranged by $\frac{1}{16}$ths from $\frac{1}{4}$in. to $2\frac{1}{2}$in. ; by $\frac{1}{8}$ths to 4in., and by $\frac{1}{4}$ths for larger sizes ; other and irregular sizes will be slightly higher than the list. Sets will be furnished to include any number of Gauges up to 6in., and of any required range.

PRICES OF "STANDARD" PATTERN GAUGES.

Size.	Price.	Size.	Price.	Size.	Price.	Size.	Price.	Size.	Price.	Size.	Price.	Size.	Price.
$\frac{1}{4}$	5/6	$\frac{13}{16}$	7/2	$1\frac{3}{8}$	10/-	$1\frac{15}{16}$	13/-	$2\frac{1}{2}$	15/8	$3\frac{5}{8}$	21/-	$5\frac{1}{2}$	28/4
$\frac{5}{16}$	5/6	$\frac{7}{8}$	7/6	$1\frac{7}{16}$	10/4	2	13/3	$2\frac{5}{8}$	16/6	$3\frac{3}{4}$	21/6	$5\frac{3}{4}$	29/-
$\frac{3}{8}$	5/6	$\frac{15}{16}$	7/9	$1\frac{1}{2}$	10/8	$2\frac{1}{16}$	13/6	$2\frac{3}{4}$	17/-	$3\frac{7}{8}$	22/-	6	30/-
$\frac{7}{16}$	5/6	1	8/-	$1\frac{9}{16}$	11/-	$2\frac{1}{8}$	13/9	$2\frac{7}{8}$	17/8	4	22/9	—	—
$\frac{1}{2}$	5/6	$1\frac{1}{16}$	8/4	$1\frac{5}{8}$	11/4	$2\frac{3}{16}$	14/-	3	18/4	$4\frac{1}{4}$	23/9	—	—
$\frac{9}{16}$	5/10	$1\frac{1}{8}$	8/8	$1\frac{11}{16}$	12/-	$2\frac{1}{4}$	14/4	$3\frac{1}{8}$	19/-	$4\frac{1}{2}$	24/6	—	—
$\frac{5}{8}$	6/2	$1\frac{3}{16}$	9/-	$1\frac{3}{4}$	12/-	$2\frac{5}{16}$	14/8	$3\frac{1}{4}$	19/6	$4\frac{3}{4}$	25/3	—	—
$\frac{11}{16}$	6/6	$1\frac{1}{4}$	9/4	$1\frac{13}{16}$	12/4	$2\frac{3}{8}$	15/-	$3\frac{3}{8}$	20/-	5	26/-	—	—
$\frac{3}{4}$	6/10	$1\frac{5}{16}$	9/8	$1\frac{7}{8}$	12/8	$2\frac{7}{16}$	15/4	$3\frac{1}{2}$	20/6	$5\frac{1}{4}$	27/4	—	—

Wyke's "Improved Universal" Screw Cutting, Centre, Depth, Angle and Twist Drill Gauge.

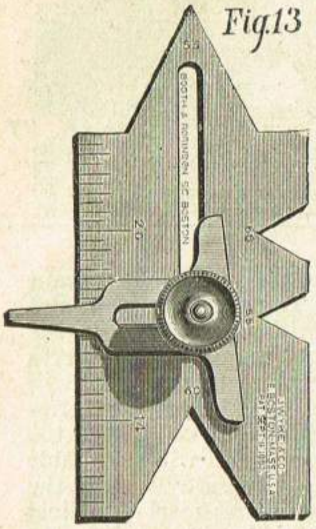


Fig.13

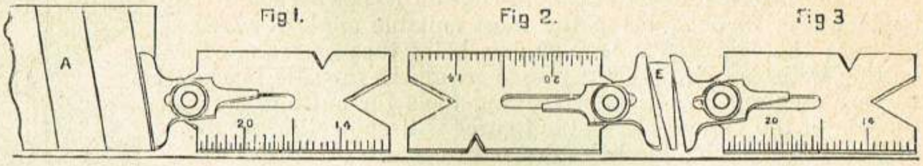


Fig 1. Fig 2. Fig 3

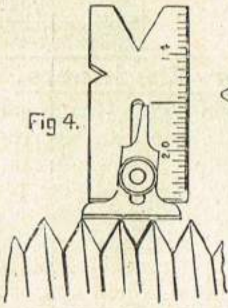


Fig 4.

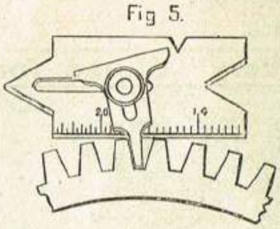


Fig 5.

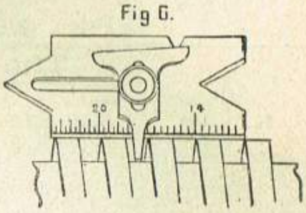


Fig 6.

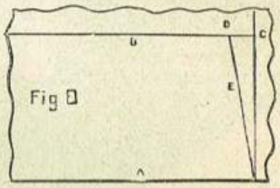


Fig 8

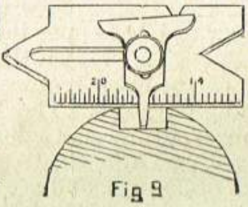


Fig 9

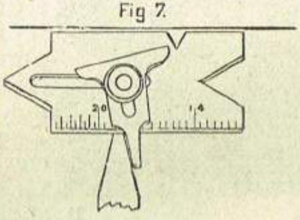


Fig 7.

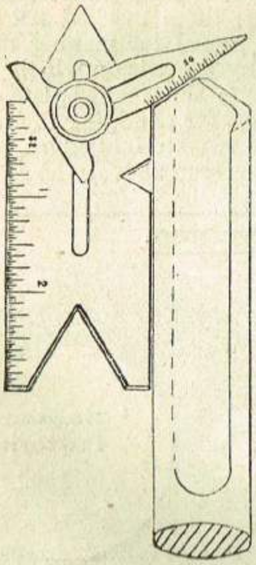


Fig 10.

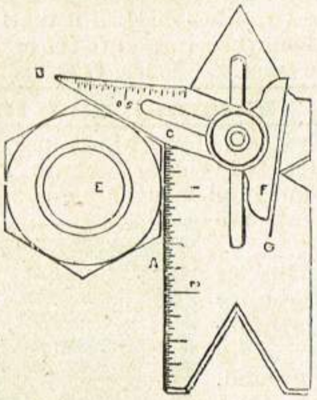


Fig 11.

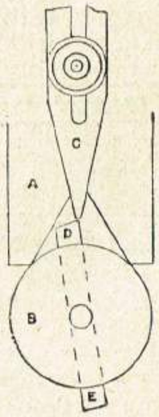


Fig 12

These Gauges, made in two sizes, are almost indispensable to the intelligent engineer. They are universal tools that can be used on a great variety of work, and in places where ordinary tools cannot be used. Their great utility will be seen by a glance at the above illustrations, which show a few of the uses to which they can be applied (the illustrations are half size). The fixed angles used in these Gauges are in No. 1, 55deg. and 60deg.; and in No. 2, 50deg., 55deg. and 60deg.

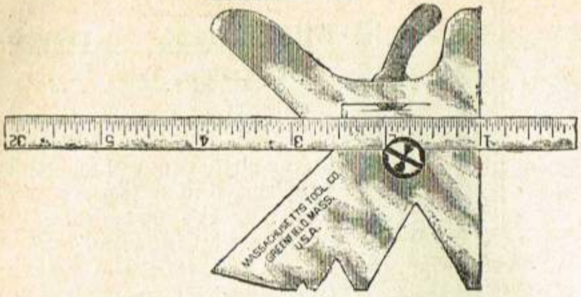
Figs. 1, 2, 3, 4, 5, 6, 7 and 9 represent our No. 1 Gauge; Figs. 11 and 12 represent No. 2 Gauge. No. 1 can be used for all screws up to ¾in. pitch. No. 2 can be used for all screws from ½in. to 2½in. pitch. The No. 2 is an attractive and large size Gauge (4in. long by 1½in. wide and $\frac{1}{16}$in. thick). It has a graduated scale 3in. long on each side of the main gauge, and one on the auxiliary gauge 1¼in. long. It can be used to gauge the largest as well as the smallest centres and twist drills; also for the largest kind of screw-cutting, and especially for screws that are too large to be cut by tools filling the space of the thread, but which are cut by square and side tools, which must be set to the exact angles required to form the thread.

PRICES.

1570	No. 1	2½in. long, 1¼in. wide, 2in. scale...	4/6 each.
1571	No. 2	4in. long, 1½in. wide, 3in. scale	7/6 „

Combination Centre Square,

No. 78.


MASSACHUSETTS TOOL CO.
GREENFIELD MASS.
U.S.A.

1572

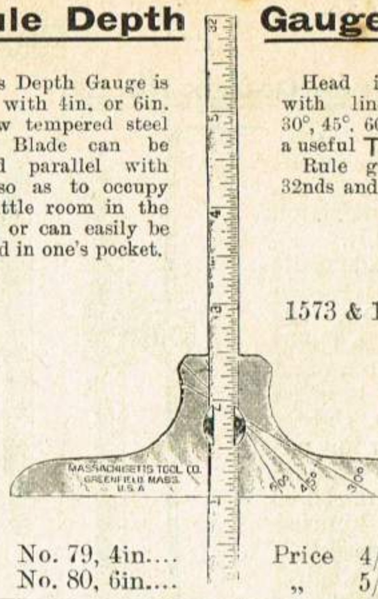
In this *all steel* Tool we believe we have succeeded in producing the most in the smallest compass and lightest weight, that has ever been offered to tool-maker or machinist. It is a Centre Square, T Square, Depth Gauge, or Centre Gauge. It lies perfectly flat on the work on one side. Frame is Steel. Rule, our regular tempered stock; 6in. in length.

Price ... ... 8/6 each.

Rule Depth Gauge.

This Depth Gauge is made with 4in. or 6in. narrow tempered steel rule. Blade can be turned parallel with base so as to occupy but little room in the chest, or can easily be carried in one's pocket.

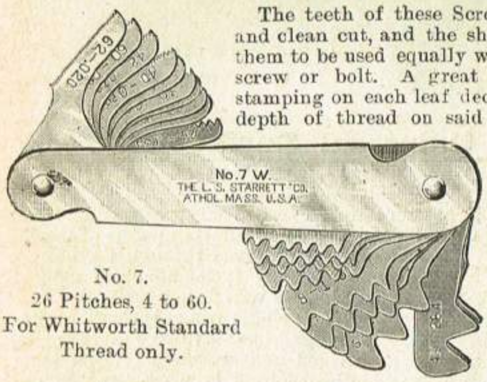
Head is graduated with lines showing 30°, 45°, 60°. It makes a useful T Square. Rule graduated in 32nds and 64ths in.


MASSACHUSETTS TOOL CO.
GREENFIELD MASS.
U.S.A.

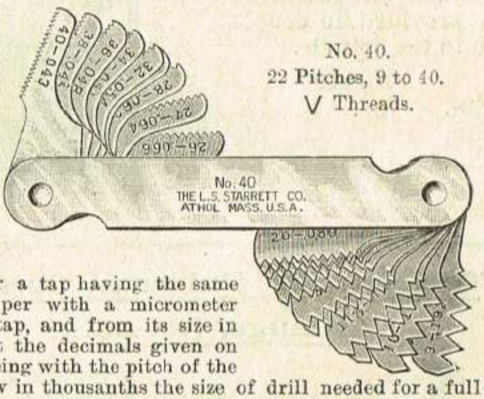
1573 & 1574

1573 No. 79, 4in.... Price 4/- each.
1574 No. 80, 6in.... „ 5/- „

Improved Screw-pitch Gauges.


No.7 W.
THE L. S. STARRETT CO.
ATHOL. MASS. U.S.A.

No. 7.
26 Pitches, 4 to 60.
For Whitworth Standard Thread only.

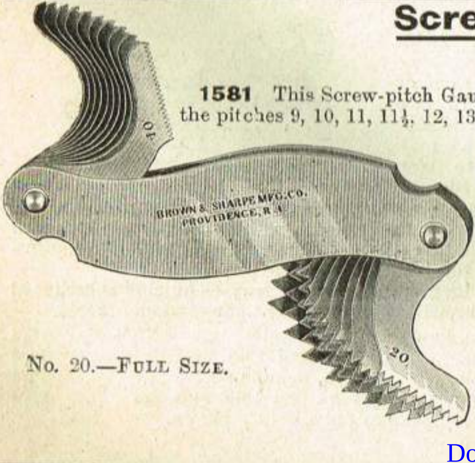

No. 40
THE L.S. STARRETT CO.
ATHOL MASS. U.S.A.

No. 40.
22 Pitches, 9 to 40.
V Threads.

The teeth of these Screw-pitch Gauges are sharp and clean cut, and the shape of the blades enables them to be used equally well inside or outside of a screw or bolt. A great improvement consists of stamping on each leaf decimals, showing the double depth of thread on said leaf, and this of course equals the depth of threads on the two sides of a tap having the same pitch, and helps the workman to determine the size of a drill needed to drill the hole the right size to leave a full V-thread for a tap having the same pitch. To do this, calliper with a micrometer over the threads of the tap, and from its size in thousanths shown, deduct the decimals given on the pitch-gauge leaf, agreeing with the pitch of the tap. The result will show in thousanths the size of drill needed for a full thread. An allowance is to be made for the extent to which it is desired the thread should be flattened. A further improvement has recently been made in reducing the width of the leaves having the finer pitches, so that they will enter small nuts.

1575	No. 4.	Price 5/-;	24 pitches...	4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30.
1576	No. 5.	„ 5/-;	26 „ ...	32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82.
1577	No. 6.	„ 6/-;	30 „ ...	4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42.
1578	No. 7.	„ 5/-;	26 „ ...	4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 40, 48, 60.
1579	No. 40.	„ 4/-;	22 „ ...	9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40.
1580	No. 157.	„ 4/-;	22 cycle pitches	32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74.

Screw-pitch Gauges.


10
BROWN & SHARPE MFG. CO.
PROVIDENCE, R.I.
20

No. 20.—Full Size.

No. 20.

1581 This Screw-pitch Gauge will measure the threads of nuts as well as of screws, and contains the pitches 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, and 20 on one end, and 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, and 40 on the other end. The eleven smaller pitches are on blades made narrower than the eleven larger ones, thus allowing a far greater use of the Gauge in measuring the threads of nuts, and also that the Gauge numbers are stamped on the outside of the frame, as well as on each blade, allowing the user to determine the position of a desired number at a glance.

No. 22.

1582 The design of this Tool is the same as for the No. 20. It will take all even numbers from 32 to 74, having twenty-two blades in all.

No. 769. (Whitworth).

1583 This Gauge, the same in design as the No. 22, contains twenty-two blades, with pitches 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, and 12 on one end, and 13, 14, 16, 18, 20, 22, 24, 25, 26, 28, and 30 on the other.

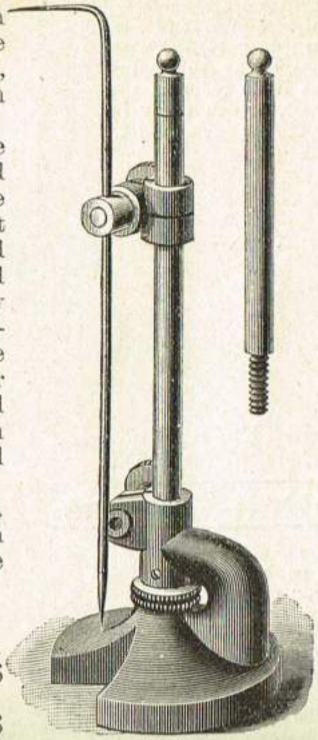
Price of either No. 20, 22, or 769 ... ... 4/- each.

Surface Gauge, No. 52.

This Gauge, with improvements as made for a few years past, gives great satisfaction to all who use it.

The sleeve and needle clasp, when loosened for adjustment, are both held by a slight spring friction, and by a single knurled nut *both* are rigidly clamped. For fine adjustment, the spindle in the base is raised or lowered by a knurled nut, and all backlash is taken up by a spiral spring in the base.

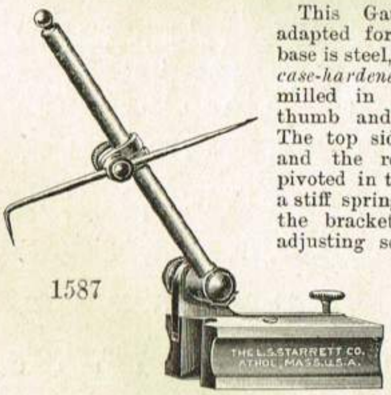
For above 12in. lengths, an extension is provided to couple on to the spindle.


1585

PRICES.

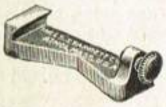
8in.	7/-
12in.	9/6
12in., with 6in. extension ...	11/6
Sleeve alone ...	2/9

Tool Makers' Universal Surface Gauge, No. 56.


1587

This Gauge is admirably adapted for light work. The base is steel, nicely finished and *case-hardened*, with depressions milled in the sides for the thumb and finger to grasp. The top side of it is slotted, and the rocking bracket is pivoted in the same. There is a stiff spring under one end of the bracket, and a knurled adjusting screw in the other; the spindle jointed to this may be set and rigidly held in any position from vertical to horizontal, and the scriber placed in position to be used below its base for Depth Gauge, or (with bent end down) a Scribing Gauge. A **V**-shaped groove in the end and bottom adapts it for use on cylindrical work. There is a small hole in the clamp next to the base in which the scriber may be used for light work, the spindle being removed. An auxiliary guide piece is furnished to clamp to the base.

It weighs but 10oz., and is 5in. high, and, folding the spindle (which is 4in. long) horizontally over the base, it may be packed in 1⅜in. by 1½in. by 4in. space in the tool chest.



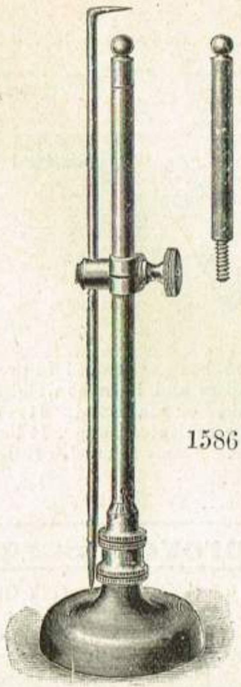
PRICES.

With 4in. Spindle and Auxiliary Guide ...	11/6
Without Auxiliary Guide	9/6

Sent with Guide unless otherwise ordered.

A 7in. Spindle is furnished, when ordered, at an extra cost of 1/-.

Starrett's Micrometer Surface Gauge, No. 53.


1586

This Gauge has a turned and polished base, a micrometer adjusting nut reading 1,000ths, and a 6in. extension for the spindle. By means of springs and taper-fitting parts of the sleeve (not shown in cut) the scriber is held by slight friction in any position while adjustments are made, and firmly held by a turn of the nut. A knurled cam on the base releases and locks the spindle for adjusting.

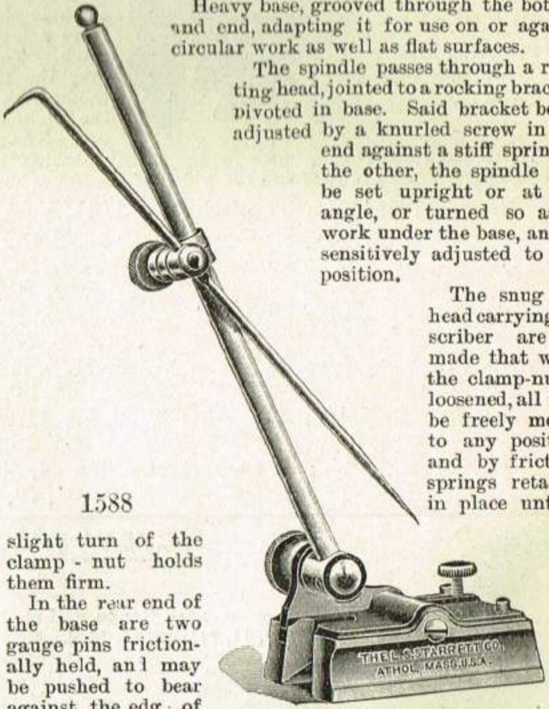
PRICES.

8in., without extension	9/6
12in., ,, ,,	13/6
12in., with 6in. ,,	15/6

In ordering, give the SIZE wanted.

New Universal Surface Gauge, No. 57.

This Gauge has our latest improvements, which make it all that can be desired, possessing the following points of merit:


1588

Heavy base, grooved through the bottom and end, adapting it for use on or against circular work as well as flat surfaces.

The spindle passes through a rotating head, jointed to a rocking bracket, pivoted in base. Said bracket being adjusted by a knurled screw in one end against a stiff spring in the other, the spindle may be set upright or at any angle, or turned so as to work under the base, and be sensitively adjusted to any position.

The snug and head carrying the scriber are so made that when the clamp-nut is loosened, all may be freely moved to any position, and by friction-springs retained in place until a slight turn of the clamp-nut holds them firm.

In the rear end of the base are two gauge pins frictionally held, and may be pushed to bear against the edge of a surface plate, or in the slot of a planer bed for lineal work.

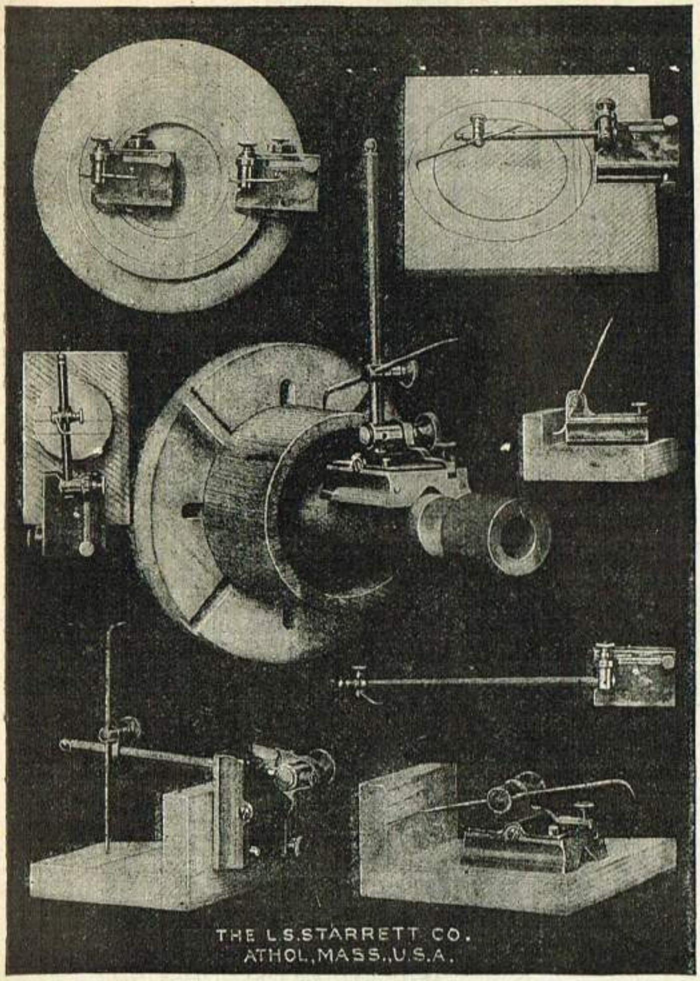
For small work, the spindle may be removed and the scriber inserted in the hole provided, where it can be sensitively adjusted and used to advantage on bench work.

An extra long spindle, which may be quickly substituted for the regular, will be sent with the gauge when ordered.

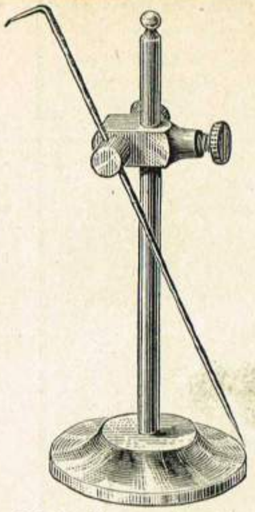
PRICES.—		
	3in. base with 9in. spindle	9/6
	3in. ,, ,, 9in. and 12in. spindles ...	11/6
	3¾in. ,, ,, 12in. spindle	11/6
	3¾in. ,, ,, 12in. and 18in. spindles ...	13/6

Spindles only, at 2d. per in.

Showing a few of the many applications of No. 56 & No. 57 Surface Gauges on page 160.



Hyne's Surface Gauge



1589 This Gauge is a thoroughly well-made tool; good materials are used and great care is taken in the fitting of the several parts, especially the screw threads.

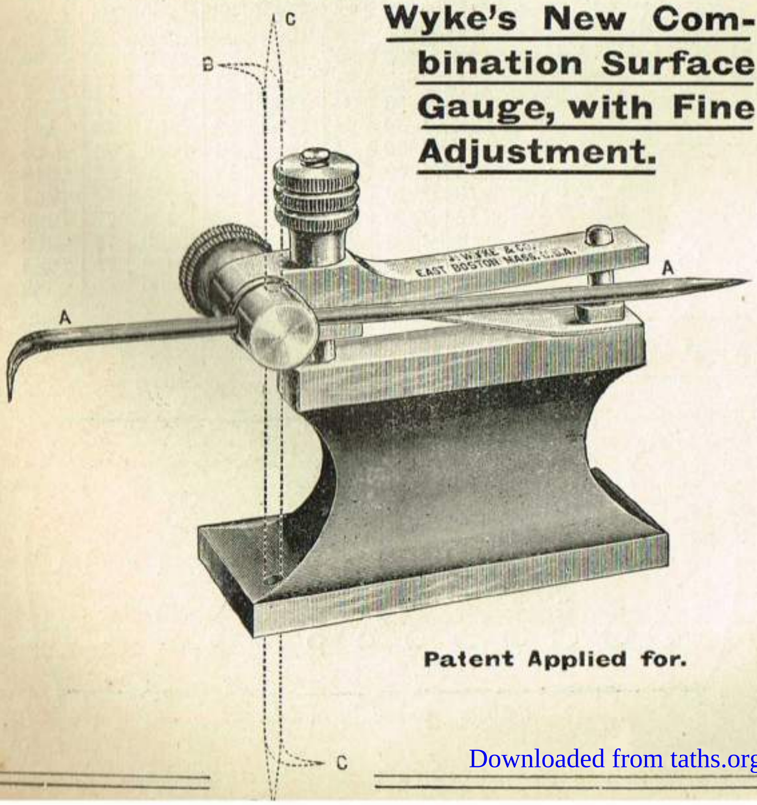
The centre hole in the base is finished with a taper reamer, and the post is turned to fit, so that the gauge may be taken apart and require less room in the chest.

The scribe is made from "Crescent" Special Drill Rod, and both points are hardened and properly tempered.

The screw which clamps the sliding block has a piece of brass inserted at its point and securely fastened in the block, which prevents the post becoming marred.

Price, 5in., 5/6 each.

Wyke's New Combination Surface Gauge, with Fine Adjustment.


C
B
A
A
J. WYKE & CO. EAST BOSTON MASS. U.S.A.
C

Patent Applied for.

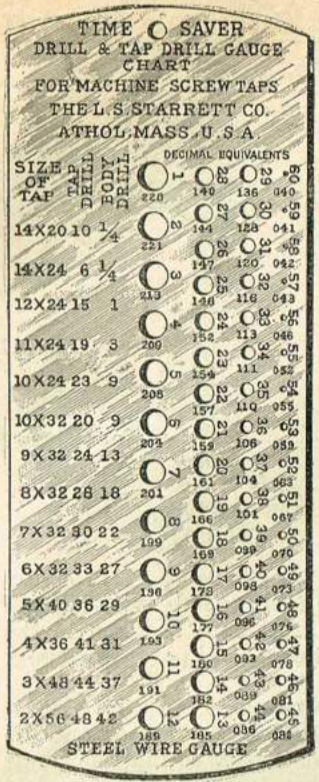
1590 The illustration shows our new Fine Adjustment Surface Gauge. It shows the tool so clearly that little description is necessary.

The base of the gauge is $2\frac{3}{4}$in. long and $1\frac{1}{8}$in. wide. The hole in base used for depthing is placed near the end and allows nearly the full length of the base for seating. The adjustment is smooth and even.

The pointer reaches about 5in. high and can be adjusted to the finest degree of accuracy in every position by thumb nut, either as surface, depth or distance gauge; inaccuracy from wear is impossible, as any lost motion from wear is automatically taken up. The letters A A, B B, C C, show the combinations of the tool.

Weight, packed in box for mailing, 8oz.

Price 10/- each.



1591

Time Saver Drill, Tap, and Steel Wire Gauge, No. 185.

By the use of this Gauge one is enabled to select at once the right-sized drill to suit machine screw tap most commonly used, leaving just stock enough for the tap to cut as near a full thread as is practicable for one tap without breaking it, thus saving much time and uncertainty of result attending the former crude ways of making a selection.

Explaining the chart, the first row of figures, for an example, reads thus : 14 × 20 10 $\frac{1}{4}$, 14 (in the first row of figures) means the number or size of tap ; 20 the pitch or size of thread ; 10 the size of drill to use which will leave the right stock for proper thread ; and $\frac{1}{4}$, size of drill to use to let this tap or screw through outside of the thread.

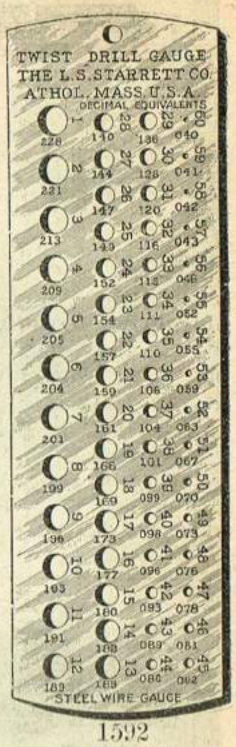
The figures—1, &c., up to 60—designate the number of drill (size agreeing with the holes). Other figures—228, 221, etc.—designate the size of hole in thousandths of an inch.

1591 Price ... ... 7/- each.

Drill and Steel Wire Gauge,
No. 186.

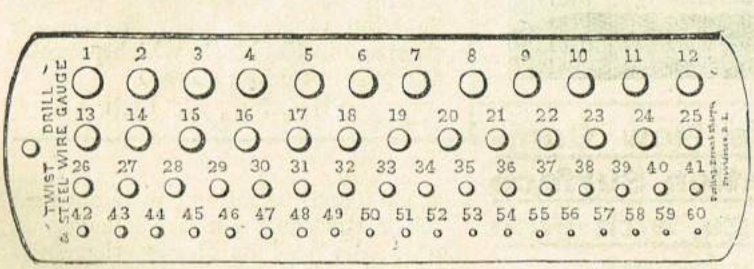
This Gauge gives the number of drill to fit each hole, and the size of the hole in thousandths of an inch.

1592 Price ... ... 6/- each.



1592

Twist Drill and Steel Wire Gauge.



1593 Price, 1 to 60 ... ... 6/6 each.

1594 „ 61 to 80 ... ... 8/6 „

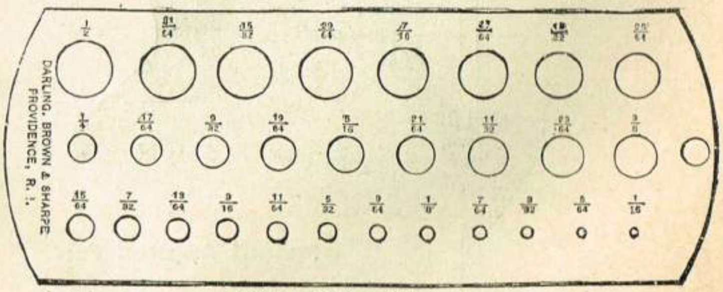
Sizes of Gauge, in Decimals.

No.	Size.	No.	Size.	No.	Size.	No.	Size.
1	·2280	21	·1590	41	·0900	61	·0390
2	·2210	22	·1570	42	·0935	62	·0380
3	·2130	23	·1540	43	·0890	63	·0370
4	·2090	24	·1520	44	·0860	64	·0360
5	·2055	25	·1495	45	·0820	65	·0350
6	·2040	26	·1470	46	·0810	66	·0330
7	·2010	27	·1440	47	·0785	67	·0320
8	·1990	28	·1405	48	·0760	68	·0310
9	·1960	29	·1360	49	·0730	69	·02925
10	·1935	30	·1285	50	·0700	70	·0280
11	·1910	31	·1200	51	·0670	71	·0260
12	·1890	32	·1160	52	·0635	72	·0250
13	·1850	33	·1130	53	·0595	73	·0240
14	·1820	34	·1110	54	·0550	74	·0225
15	·1800	35	·1100	55	·0520	75	·0210
16	·1770	36	·1065	56	·0465	76	·0200
17	·1730	37	·1040	57	·0430	77	·0180
18	·1695	38	·1015	58	·0420	78	·0160
19	·1660	39	·0995	59	·0410	79	·0145
20	·1610	40	·0980	60	·0400	80	·0135

Jobbers' Drill Gauge.

Sizes of Gauge, in Decimals.

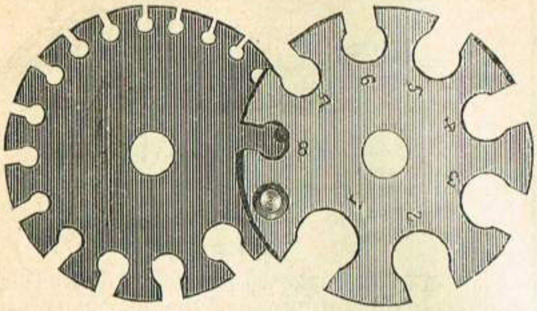
Size.	Decimal.	Size.	Decimal.	Size.	Decimal.
$\frac{1}{16}$	·0625	$\frac{7}{32}$	·21875	$\frac{3}{8}$	·375
$\frac{5}{64}$	.07812	$\frac{15}{64}$	·23437	$\frac{25}{64}$	·39062
$\frac{3}{32}$	.09375	$\frac{1}{4}$	·25	$\frac{13}{32}$	·40625
$\frac{7}{64}$	·10937	$\frac{17}{64}$	·26562	$\frac{27}{64}$	·42187
$\frac{1}{8}$	·125	$\frac{9}{32}$	·28125	$\frac{7}{16}$	·4375
$\frac{9}{64}$	·14062	$\frac{19}{64}$	·29687	$\frac{29}{64}$	·45312
$\frac{5}{32}$	·15625	$\frac{5}{16}$	·3125	$\frac{15}{32}$	·46875
$\frac{11}{64}$	·17187	$\frac{21}{64}$	·32812	$\frac{31}{64}$	·48437
$\frac{3}{16}$	·1875	$\frac{11}{32}$	·34375	$\frac{1}{2}$	·50
$\frac{13}{64}$	·20312	$\frac{23}{64}$	·35937		



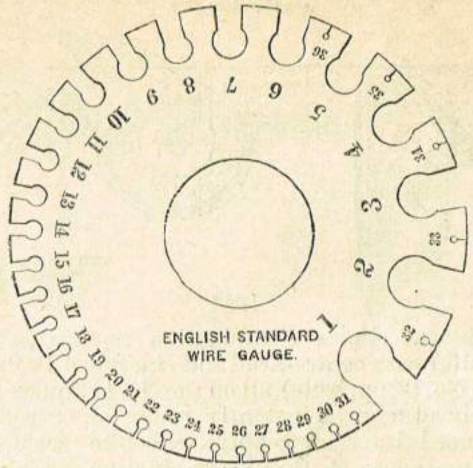
1595 Price 9/6 each.

Wire and Sheet Metal Gauges.

Imperial Standard Gauges, as Adopted by the Board of Trade, March, 1884.

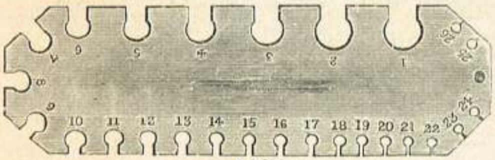


1596



1600

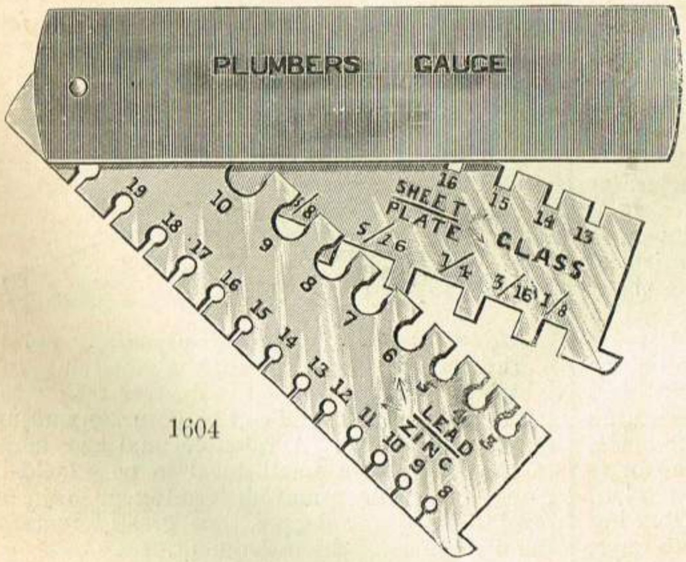
1596	Best Double Circular Wire Gauges, Nos. 1 to 26	5/- each.
1597	Ditto ditto Nos. 1 to 36	7/- ,,
1598	Best Circular Wire Gauges, Single, Nos. 1 to 26	5/6 ,,
1599	Ditto ditto with Decimal Points on Reverse Side	6/6 ,,
1600	Best Single Circular Wire Gauges, 1 to 36, with Decimal Points on Reverse Side...	8/- ,,



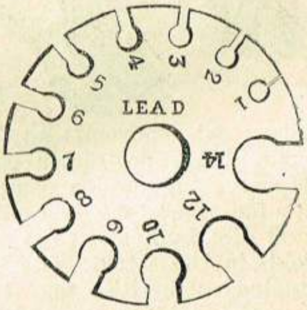
1602

1601	Oblong Wire Gauges, Pocket Size, Nos. 4 to 24	4/- each.
1602	Oblong Wire Gauges, Nos. 1 to 26 ...	5/6 each.
1603	Ditto ditto Nos. 1 to 36 ...	7/6 ,,

Plumbers' Gauges.



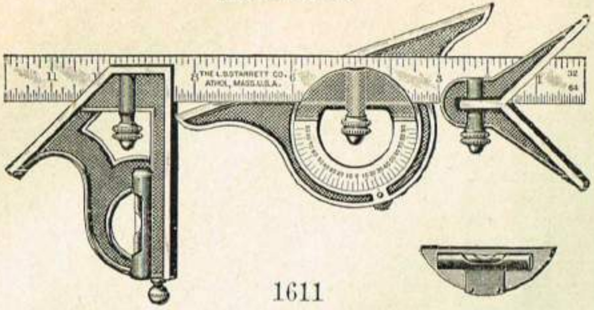
1604



1609

		Price
1604	Plumbers' Gauge, in Brass Case, containing Lead Sizes, Nos. 3 to 12 ; Zinc Sizes, Nos. 8 to 20 or Nos. 6 to 18 ; Glass Sizes, Plate Glass, ⅛in. to ½in. ; Sheet Glass, Nos. 13, 14, 15, 16, 19, 21, 26, 32, 36, 42	9/6 each.
1605	Ditto ditto as above, but containing third Leaf with Imperial Standard Wire Gauge	14/6 ,,
1606	Combined Lead, Zinc and Imperial Standard Oval Folding Gauge (4 Leaves) ...	11/6 ,,
1607	Glass Gauge, Single Leaf, as in Plumbers' Gauge	5/- ,,
1608	Lead and Zinc Gauge, ditto ditto	4/6 ,,
1609	Circular Lead Gauges, Nos. 1 to 14	4/- ,,
1610	Circular Zinc Gauges, Nos. 5 to 18	4/- ,,

Starrett's Combination Set, No. 9.


THE L.S.STARRETT CO.
ATHOL, MASS.U.S.A.

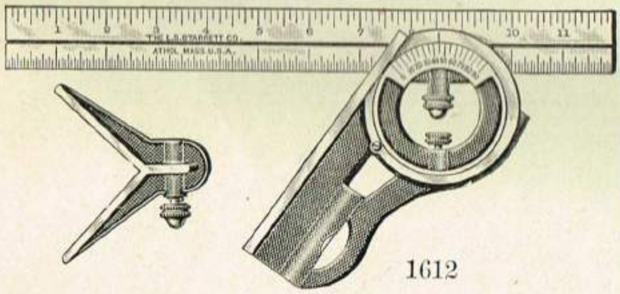
1611

This cut shows Combination Square (No. 11, opposite) with centre-head and 7in. Bevel Protractor head (No. 12, opposite), all on the No. 11 Square scale. Each head may be instantly removed, or replaced and used interchangeably with the scale, thus forming the most useful combination set of tools ever devised for mechanics' use.

PRICES.

9in., set complete, no Level Attachment			13/6	each.
12in.,	,,	,,	14/6	,,
18in.,	,,	,,	17/-	,,
24in.,	,,	,,	18/6	,,
Level Attachment, extra	...	...	1/-	,,

Starrett's Patent Inclinometer, No. 10.


THE L.S.STARRETT CO.
ATHOL, MASS.U.S.A.

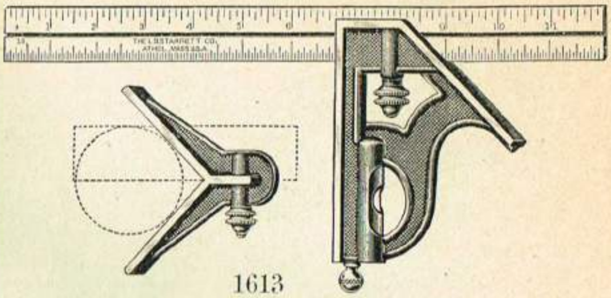
1612

The above cut represents an Inclinometer, try square, and bevel protractor combined. It is compact, convenient, and a complete and perfect substitute for several costly tools. It consists of a stock and disc, both slotted to receive the blade, which folds in the stock. The blade attached to the graduated rotary disc may be secured at any angle from 0 to 90 degrees, and by loosening the clamp-screw it may be shortened or extended full length, or removed for a straight-edge. The working face of the stock, extending both sides of the blade, admits of its being reversed, so that the same angle may be laid off in opposite directions *without changing* the angle in the tool, thus requiring but ¼ of a graduated circle to obtain all angles both ways. At 90deg., the blade brings up against a case-hardened screw, accurately adjusted, thus forming a TRY SQUARE; by holding the blade perpendicular (the level in the stock being at right angles), a PLUMB; by folding the tool, a LEVEL, length of blade.

The blades are graduated one edge each in 8ths, 16ths, 32nds, and 64ths. PRICES.

With 12in. Blade	...	...	19/-	each.
With 18in. ,,	...	...	22/6	,,
With 24in. ,,	...	...	26/6	,,
Centre-head, to fit all sizes, extra	...	...	3/-	,,

Starrett's Patent Combination Square, No. 11.


THE L.S.STARRETT CO.
ATHOL, MASS.U.S.A.

1613
New Design.

Every tool warranted accurate. With the adjustable scale this forms one of the most convenient and useful tools ever devised for mechanics' use. One is a complete substitute for a whole set of common try-squares, and is one of the best gauges made for transferring exact measurements, or laying out work. It is also convenient for a depth gauge, or to square in a mortice. For a mitre it is perfect, while with the auxiliary centre-head it forms a centering square, both inside and outside, which for convenience and accuracy has no equal.

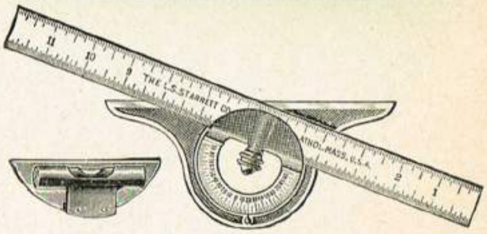
PRICES.

4in., without Centre-head or Level		...		2/9	each.
6in., with Centre-head		...	...	5/6	,,
9in.,	,, ,,	...	...	6/3	,,
12in.,	,, ,,	...	...	7/-	,,
18in.,	,, ,,	...	...	10/-	,,
24in.,	,, ,,	...	...	12/-	,,

The 6in., 9in., 12in, 18in., and 24in. have levels (in their stocks) and centre-heads. The 18in. and 24in. have same stock as 12in.

Starrett's Improved Bevel Protractor, No. 12.

1614


THE L.S.STARRETT CO.
ATHOL, MASS. U.S.A.

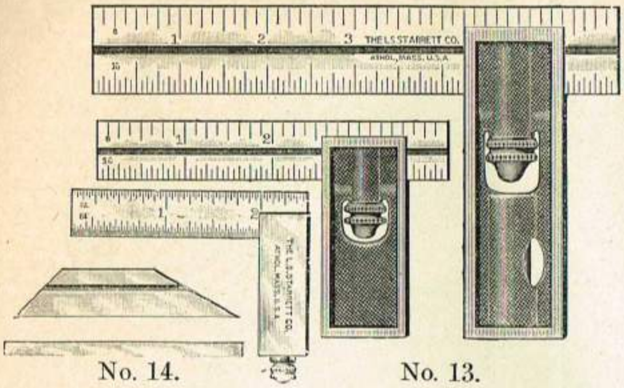
An adjustable rule, held firmly at any point by a thumb-nut, passes through a revolving turret which is nicely graduated in degrees from 0 to 90, both right and left, and can be accurately adjusted to show any angle. A valuable auxiliary is made in the shape of a small level to be attached in place of the rule removed, forming an adjustable level to show any degree, thus greatly increasing the usefulness of the instrument.

PRICES.

9in., Head and Blade, no Level			...	10/-	each.
12in.,	,,	,,	...	11/-	,,
18in.,	,,	,,	...	12/6	,,
24in.,	,,	,,	...	14/6	,,
Protractor Head only, without Level attachment				7/6	
Level, extra	...	...	...	1/-	

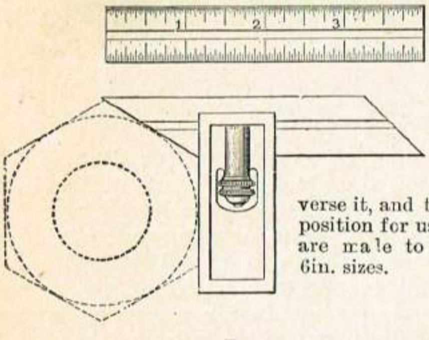
The blades are the same as those used on our No. 11 squares. Those of No. 4 graduation will be sent unless otherwise ordered. The head is 7in. long. The Protractor will be sent without the Level unless otherwise ordered.

Patent Double Square.



No. 14. No. 13.

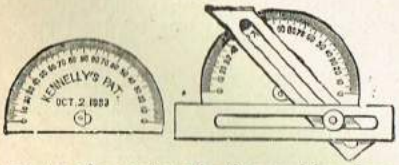
This Square is conceded the most practical one for machinists' and fine tool makers' use ever offered. The sliding scale, shortened or extended full length, makes it more valuable than a full set of the common kind, while, with the extra bevel blade shown in the following illustration, we have both the hexagon and octagon angles. The seat against which the blade is clamped being convex, should corners of blade get injured, the accuracy of the Square is not affected.



This illustration represents the 4in. and 6in. Double Square, with hexagon end of blade applied. Reverse it, and the octagon is in position for use. Bevel blades are made to fit only 4in. and 6in. sizes.

		PRICES.	each.
1615	No. 13	4in., with both Blades ...	6/6
	No. 13	6in., „ „ ...	9/6
	No. 13	9in., with Straight Blade only	11/6
	No. 13	12in., „ „ ...	15/6
1616	No. 14	2½in. (Solid Steel), with both Blades	10/-

Kennelly's Patent Protractor.

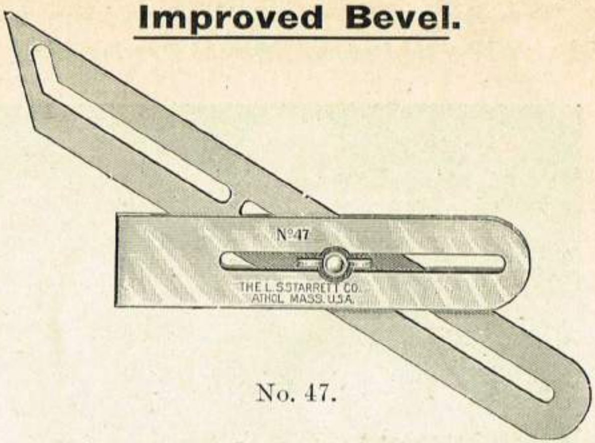


This illustration represents an improved Protractor, designed specially for machinists, toolmakers, and pattern-makers. An experience of a quarter of a century in the machine shops of the country convinces us that nine out of every ten men have a plain bevel square of some kind, which, though it may be set at any angle, yet it will not tell just how many degrees that angle is. It is here that Kennelly's Patent Protractor comes to his aid. After he has set his plain bevel square to any angle, he can place the beam on the edge of the Protractor, as shown in the illustration, bring the blade over the graduated face until it reaches the flat side of the centre, which will adjust itself to the edge of the blade, and the correct number of degrees is at once shown.

We have no hesitation in saying that it has a wider range in determining angles than any other Protractor, no matter how high priced. It is made of steel, accurately graduated. It is well finished, and there is nothing to get out of order.

1617 Price 4/6 each.

Improved Bevel.

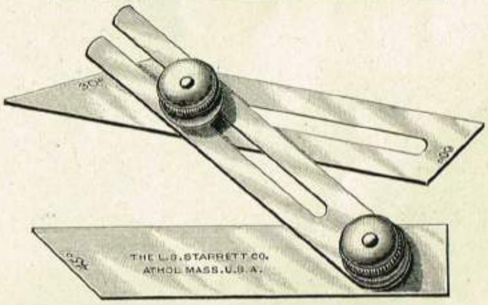


No. 47.

The advantage of this Bevel over any other tool of this kind made consists in it having not only the blade slotted but the stock as well, through and through, thus admitting adjustments that cannot be obtained with a common bevel. The clamping screw head, which the illustration does not show, is let into a rabbet flush with the surface of the stock, which will lie flat on the work.

	PRICES.			
1618	6in.	Stock,	3½in. long, 5/-	each.
	9in	„	4¾in. long, 5/9	„
	12in.	„	6in. long, 6/9	„

Combination Bevel.

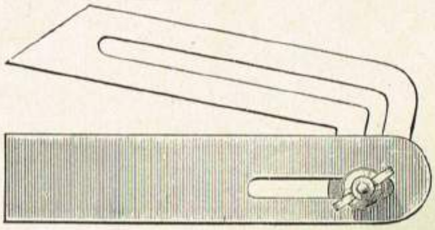


No. 49.

1619 Price 7/9 each.

This Bevel, as will be seen, has a stud riveted in the straight-edge stock or head, on which its split blade is hinged, so as to swing over the stock, and by the knurled nut clamped at any angle, adapting it for laying out work in a very simple manner. The slotted auxiliary blade with clamp bolt may be slipped on to the split blade and be clamped at any desired angle, and used in combination with the stock of the other, for laying out work, measuring, or showing any angle desired, and when so combined, will lie flat upon its work. The stock is about 4in. long.

Universal Bevel.



1620

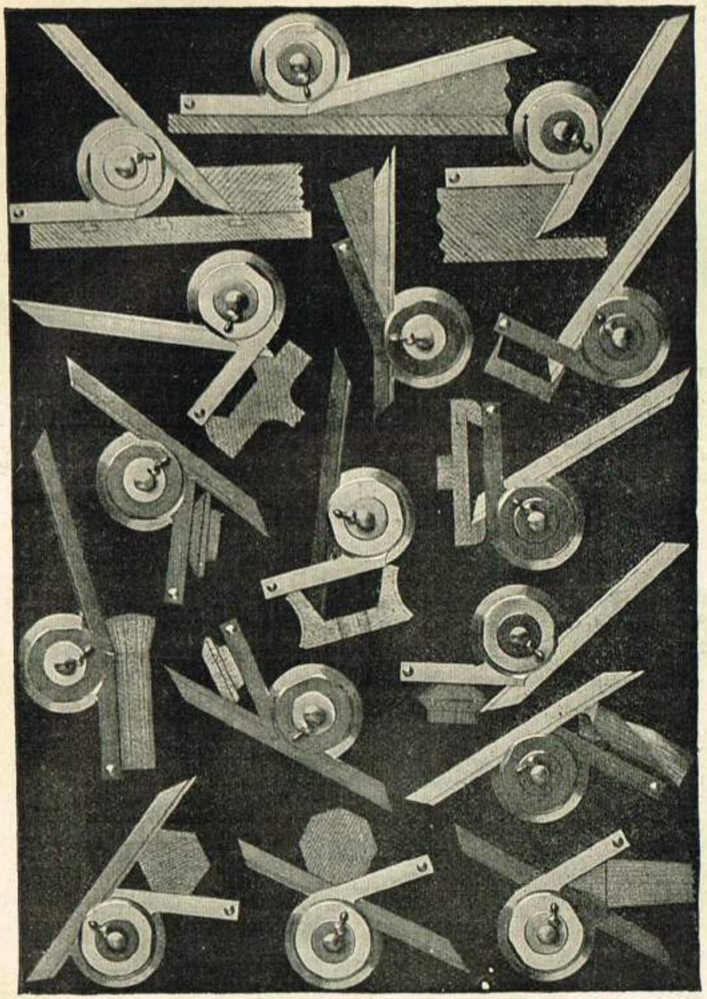
No. 15

Price 5/9 each.

Improved features. The set-off in the blades increases its capacity and usefulness for bevel gear work, &c., so that any angle, however slight, may be obtained.

Another valuable feature is, one edge of the case being solid forms a rest directly under the blades, where thin templets may be placed and accurately fitted.

Showing a few of the various uses of Starrett's Universal Bevel Protractor, No. 360.



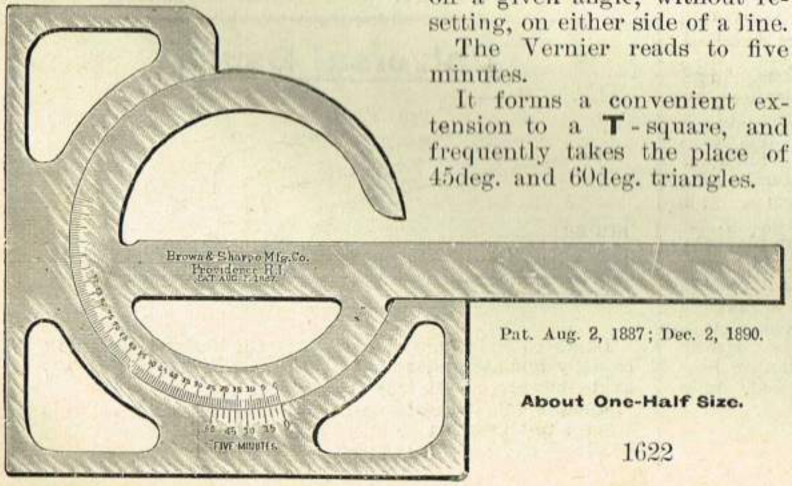
Draughtsmen's Protractor.

No. 530. Price 27/-. In Morocco Case, 32/6 each.

This Protractor can be quickly set to any angle. It can be used either side up and on either of the two straight edges, and it is of advantage in dividing a circle, transferring angles or laying off a given angle, without re-setting, on either side of a line.

The Vernier reads to five minutes.

It forms a convenient extension to a **T**-square, and frequently takes the place of 45deg. and 60deg. triangles.

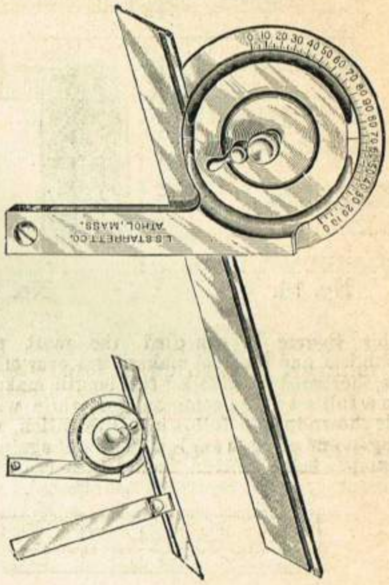


Pat. Aug. 2, 1887; Dec. 2, 1890.

About One-Half Size.

1622

Starrett's Universal Bevel Protractor, No. 360.



1621

This tool weighs 6oz. The blade is either 7in. or 12in. by ½in., the stock 4in. long, and both are made from sheet steel, nicely finished. The disc is graduated in degrees from 0 to 90 each way, and rotates the entire circle on a central stud inside the case. The blade (clamped by an eccentric stud against the edge of the disc) may be slipped back and forth its full length, or turned at any angle around the circle and firmly clamped at any point, adapting it for work in positions where others cannot be used, and rendering the common universal bevel (for transferring angles) unnecessary. One side of the stock being flat, makes it a convenient tool for laying on paper in draughting, &c., and it has double the utility of any other tool of the kind.

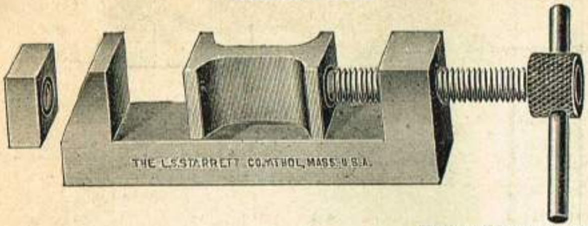
The attachment shown in the smaller engraving will be found very convenient for grinding worm thread tools, tapers on lathe centres, and all long tapers.

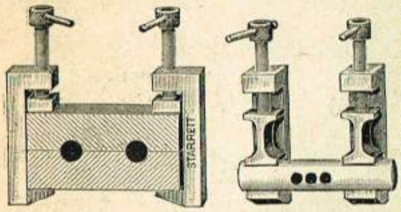
PRICES.

7in.	20/- each.
7in., in Leatherette case	23/6 „
12in.	24/6 „
12in., in Leatherette case	29/- „
With both 7in. and 12in. blades, in Leatherette case	31/- „
Attachment, extra ...	4/3 „

All sent in case unless otherwise ordered.

Tool Makers' Steel Clamps, No. 160.


THE L.S.STARRETT CO. ATHOL, MASS. U.S.A.



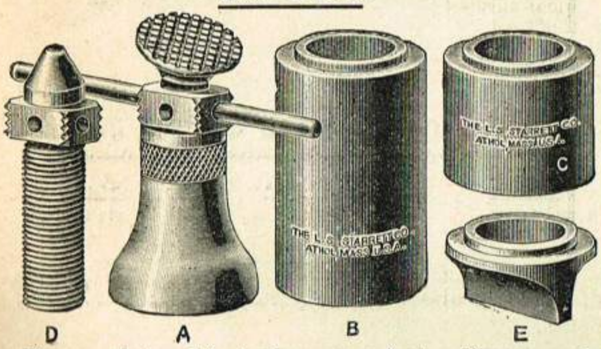
1623

These Clamps are made from drop forgings, nicely finished, case-hardened, and have take-up blocks to slip on and off end of screw, and are held to same in a novel manner. They will hold work square and parallel for laying out on surface plates, fitting or drilling. A round piece may be rigidly held in two of the Clamps and drilled on an upright, central and parallel. Put up and sold in pairs. With the small block in use, the capacity of the smaller clamp is a little over 1in., and that of the larger clamp 2in.

PRICES.

1in. (per pair) ... 4/- 2in. (per pair) ... 5/-

Starrett's "Little Giant" Jack Screws.


THE L.S. STARRETT CO. ATHOL, MASS. U.S.A.
C
THE L.S. STARRETT CO. ATHOL, MASS. U.S.A.
D
A
B
E

These are designed for tool-room use, for levelling up work on a planer-bed or under an upright drill, setting up machinery, etc. All parts are case-hardened.

1624 No. 190. The Jack (A) is $1\frac{1}{4}$in. diameter at the base, and has a range from $2\frac{1}{2}$in. to $3\frac{5}{8}$in. It will raise 1,000lb. or more. Two extension bases (B and C) are made to fit the base of the main part (A), and are 2in. and 1in. high respectively. With these two extensions used singly or together, a reach from $2\frac{1}{2}$in. to $6\frac{1}{2}$in. may be obtained.

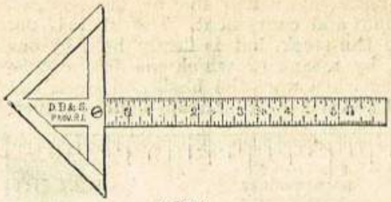
An auxiliary pointed screw (D) is supplied, to be used in place of the screw with swivel cap, in certain places where it may be preferable. The base (E) is also provided, for use in cases where such a shape may be desirable.

1625 No. 191. A smaller size is made, 1in. diameter. Part A, $1\frac{1}{2}$in. high; B, 1in.; and C, $\frac{1}{2}$in. With this size, adjustments from $1\frac{1}{2}$in. to $3\frac{1}{2}$in. are obtainable.

PRICES. (For either the No. 190 or 191.)

Jack (A)	3/- each.
Extension Base (B)	1/- ,,
Extension Base (C)	9d. ,,
Extension Base (E)	9d. ,,
Extra Screw (D)	9d. ,,
Jack, with all Attachments	5/9 ,,

"Universal" or Centre Squares.



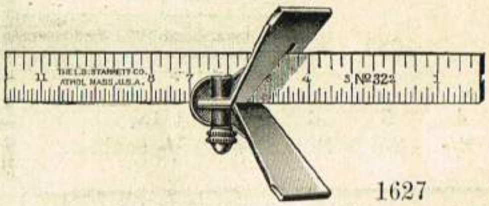
1626

The "Universal" or Centre Squares have blades graduated on one side only. The 4in. blade is graduated to 32nds of an inch on first corner and to 20ths of an inch on the second corner.

The 6in., 8in., 10in., and 12in. blades are graduated on the first corner to 16ths. of an inch. The last inch of first corner is graduated to 32nds of an inch. The second corner is graduated to 12ths of an inch. The last inch of second corner is graduated to 48ths of an inch.

No.	Price.	Length of Blade.	Length of Head.
650	8/6	4in.	3in.
652	10/6	6in.	4in.
654	15/-	8in.	$5\frac{1}{2}$in.
656	21/-	10in.	7in.
658	25/-	12in.	$8\frac{3}{4}$in.

Starrett's Centre Square, No. 32.


THE L.S. STARRETT CO. ATHOL, MASS. U.S.A.
No 32

1627

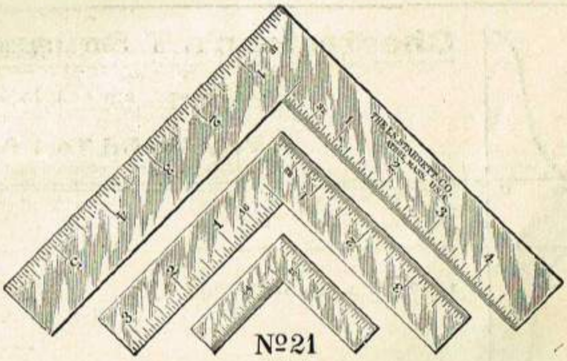
The Centre-head on this tool is made with broader sides than those on our No. 11 Centre-head, which feature is of value in many kinds of work. The sides are $1\frac{5}{16}$in. wide at the ends. This Centre-head can be furnished to fit the 12in., 18in., and 24in. sizes of No. 11 square. No. 9 Set, and No. 10 Inclinometer, as well as the same tools graduated in millimetres, at an advance of 2/- each over the price with ordinary Centre-head.

PRICES.

Centre-head, alone	4/- each.
,, ,, with 12in. blade ...	8/- ,,
,, ,, ,, 18in. ,, ...	11/- ,,
,, ,, ,, 24in. ,, ...	13/6 ,,

Thin Steel Try Squares.

For Machinists and Draughtsmen.


THE L.S. STARRETT CO. ATHOL, MASS. U.S.A.

Nº21

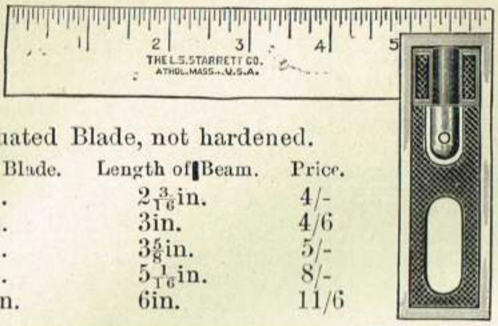
1628

PRICES.

2in., $\frac{1}{20}$in. thick, grad. 16ths and 64ths one side, 32nds and 64ths other ...	4/- each.
3in., $\frac{1}{20}$in. thick, grad. 16ths and 64ths one side, 32nds and 64ths other ...	6/- ,,
4in., $\frac{1}{16}$in. thick, grad. 16ths and 32nds both sides	8/- ,,
6in., $\frac{1}{16}$in. thick	12/- ,,

Starrett's Reliable Try Squares, No. 60.

The following cut represents a new line of Try Squares, handsome in design, light and convenient. The blade is not riveted or soldered to the stock, but is firmly held by our patent bolt and nut, by means of which the tool can be readily taken apart, and when worn the blade and stock can be re-ground or lapped, and put together again as good as new.


1 2 3 4 5
THE L.S.STARRETT CO.
ATHOL.MASS.-.U.S.A.

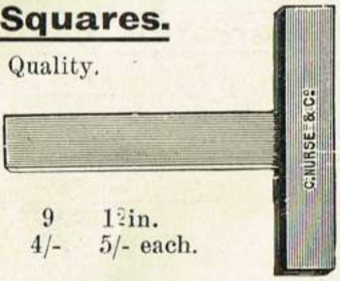
1629

Graduated Blade, not hardened.

Length of Blade.	Length of Beam.	Price.
4in.	$2\frac{3}{16}$in.	4/-
5in.	3in.	4/6
6in.	$3\frac{5}{8}$in.	5/-
9in.	$5\frac{1}{16}$in.	8/-
12in.	6in.	11/6

Steel T Squares.

Medium Quality.



1630

3	4	5	6	9	12in.
1/6	2/-	2/3	2/9	4/-	5/- each.

Try Square with Level.

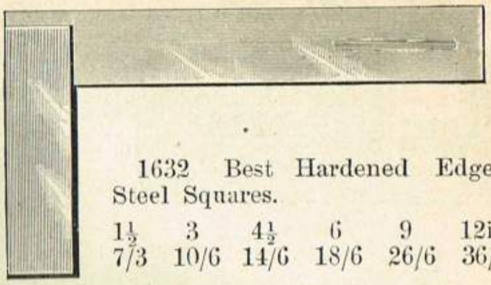
THE L.S.STARRETT CO.
ATHOL MASS.U.S.A.

1631

This is a well made and reliable tool, and valuable in plumbing, squaring, and levelling up work. Just the thing to use about a planer or in setting up machinery. Levelling is indicated every way without moving the tool. It weighs 3oz. Size 2in. by 3in. by $\frac{1}{2}$in. thick. Can be easily carried in the pocket.

Price 6/-

Steel Try Squares.



1632 to 1634

1632 Best Hardened Edge Solid Steel Squares.

$1\frac{1}{2}$	3	$4\frac{1}{2}$	6	9	12in.
7/3	10/6	14/6	18/6	26/6	36/- each.

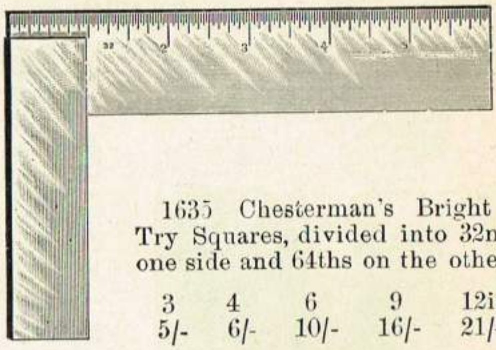
1633 Chesterman's Steel Try Squares.

3	4	6	9	12in.
4/-	4/6	7/6	14/-	18/- each.

1634 Cheaper Quality Steel Try Squares.

2	3	4	5	6	9	12in.
1/3	1/6	1/9	2/-	2/3	3/-	4/- each.

Graduated Steel Squares.



1635

1635 Chesterman's Bright Steel Try Squares, divided into 32nds on one side and 64ths on the other.

3	4	6	9	12in.
5/-	6/-	10/-	16/-	21/- each.

1636 Cheaper Quality Steel Try Squares, divided on one edge only into 16ths, 32nds, and 64ths.

2	3	4	5	6	9	12in.
1/6	1/9	2/-	2/3	2/6	3/6	4/6 each.

Chesterman's T Squares, with Brass Stocks and Bright, Tempered Steel Blades.

A Very Useful Tool for Engravers, Fitters, etc.

$\frac{1}{2}$ Size

1637 Machine-divided.

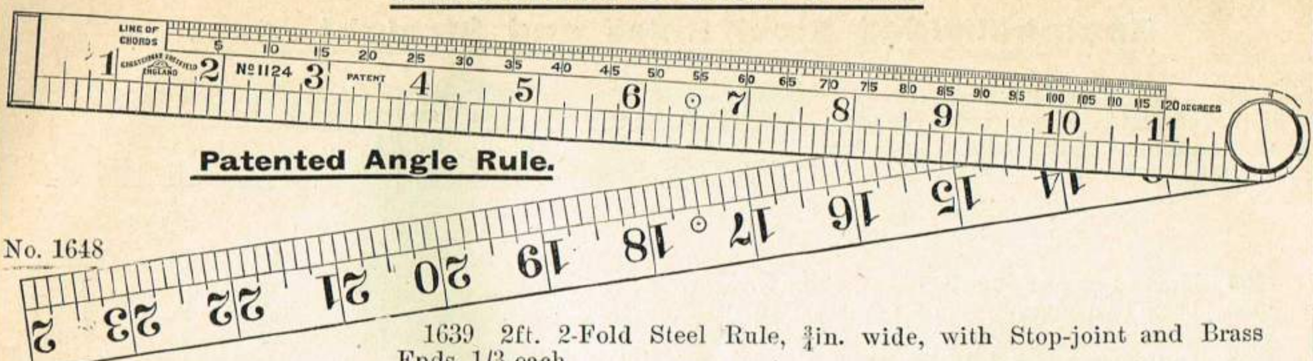
$\frac{1}{2}$ Size

1638

		6	8	10	12in.	
1637	Plain Bright Steel Blade, with Fixed Brass Head ...	1/9	2/-	2/3	2/6	each.
1638	Ditto with Fixed and movable Brass Head, with Lock Nut	3/6	4/-	4/6	5/-	,,
	May be had also with the blades Nickel-plated ... extra	6d.	6d.	6d.	6d.	,,
	Ditto with one edge machine-divided into Inches and 32nds ... ... extra	6d.	6d.	9d.	9d.	,,

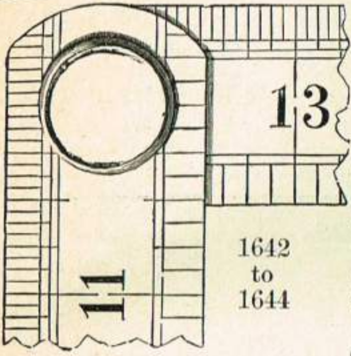
Price given for 1637 is for Plain Blades—not machine-divided as in illustration.

Chesterman's Steel Rules.



Patented Angle Rule.

No. 1648



1642
to
1644

1639 2ft. 2-Fold Steel Rule, ¾in. wide, with Stop-joint and Brass Ends, 1/3 each.

1640 2ft. 2-Fold Steel Rule, ¾in. wide by No. 21 W.G., Stop-joint and G.S. Ends, Machine-divided, 1/9 each.

1641 2ft. 2-Fold Steel Rule, ⅞in. wide by No. 19 W.G., Stop-joint and G.S. Ends, Machine-divided, 2/- each.

1642 2ft. 2-Fold Steel Rules, Machine-divided, with Stop-joint forming Rule and Square, 1⅛in. wide by No. 19 W.G., divided on two edges into 8ths and 16ths, 3/6 each.

1643 2ft. 2-Fold Steel Rule, divided on four edges into 8, 16ths, 32nds, and 64ths, 4/6 each.

1644 2ft. 2-Fold Steel Rule, divided on three edges into 16ths, 32nds, 64, 10, 20, 50, 100, 12, 24, 48, 96ths, and Tapping and Spanner Sizes on one edge, 5/6 each.

Patented Angle Rule for Measuring or Setting-out Angles to any degree, with Improved Stop-joint, forming Square and Straight-edge :—

1645 No. 1153s. Inches on 2 edges into 8, 16ths, 32nds, and 64ths ... ... 2ft., 4/6 each.
1646 No. 1154s. „ 4 „ 8, 16ths, 32nds, and 64ths ... ... „ 5/- „
1647 No. 1158s. „ 3 „ 16ths, 32nds, 64, 10, 20, 50, 100ths, 3rds, 5, 7, 9, 11, 13, 15, 17, 19ths, 21sts, 23rds, and 25ths, and Tapping and Spanner sizes ; millimetres and halves or other edge ... ... „ 6/- „
1648 No. 1124. Inches on both sides, into 8 and 16ths, and without Stop-joint ... „ 2/6 „

INSTRUCTIONS FOR USE FOR RULES Nos. 1645 To 1648.

This Jointed rule has an accurate Scale of Chords engraved on one side, from 0° to 120°, advancing by half degrees, and is also provided with two centre-dots, one on each blade, by which, with the aid of a pair of dividers, the rule can be set to any desired angle, or *vice versa*, any angle can be determined.

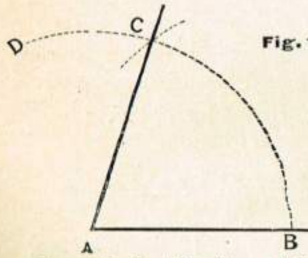


Fig. 1.

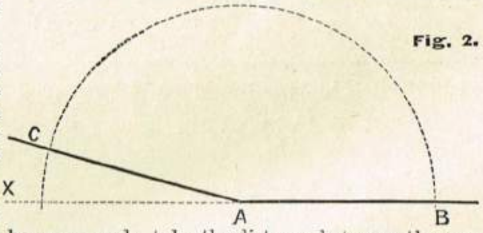


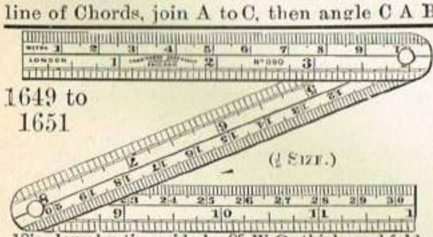
Fig. 2.

EXAMPLE : To set the Rule to 40°.—Take the length on the line of Chords (from 0° to 40°) with the Dividers, and open out the blades of the Rule until the distance between the dots agrees exactly with the Dividers. The angle made by the blades, either external or internal, is then 40°.

AGAIN : To Measure an Angle.—This is the reverse of the above. Open the Rule until the blades coincide with the angle to be measured ; take the distance between the two dots with the dividers, and see what this represents on the line of Chords. The reading is the angle required. The line of Chords may also be used in the ordinary way for setting out angles on the drawing board or marking-off table, thus : Draw a line A B, and from A with radius A B *equal to the 60° on the line of chords*, describe an arc B D, fix the compasses to the DEGREE REQUIRED on the line of Chords, and from B set off B C. Join A to C and angle C A B = the required angle. Beyond 100° it is better to set out the *difference of the required angle from 180°*, as if the scale were continued the divisions would be too close for accurate work.

EXAMPLE : To set out 165°. Here 180°—165°=15°. Produce line A B to X, A X being equal A B ; mark off X C=15° on line of Chords, join A to C, then angle C A B=165°.

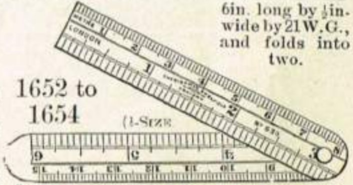
Machine-divided Steel Pocket Rule.



1649 to
1651

(½ SIZE.)

12in. long by ½in. wide by 25 W.G. thick, and folds into three.



1652 to
1654

(½-SIZE

6in. long by ½in. wide by 21W.G., and folds into two.

1649 No. 835. 12in. long by ½in. wide. Marked on one side into inches, 16ths, 32nds, and 64ths, 1/3 each.

1650 No. 891. Ditto. Marked on one side into inches, 16ths, 32nds, and 64ths, centimetres into millimetres and halves, 1/6 each.

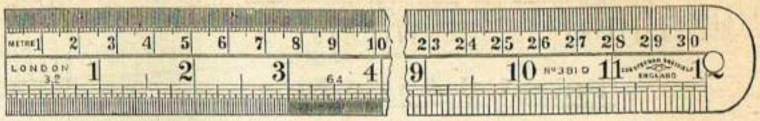
1651 No. 892. Ditto. Marked on both sides into inches, 16ths, 32nds, and 64, 10, 20, 50, 12, 24, 48ths, centimetres into millimetres and halves ... ... 2/- each.

NOTE.—Leather Cases can be had for above at 3d. each.

1652 No. 630. 6in. long by ½in. wide. Marked on one side into inches and 16ths, and centimetres into millimetres ... ... 1/- „
1653 No. 631. Ditto. Marked on one side into inches, 16ths, 32nds, and 64ths ... ... 1/- „
1654 No. 710. Ditto. Marked on one side into inches, 16ths, 32nds, 64ths, and centimetres into millimetres and halves .. .. 1/3 „

Engine-divided Steel Rules and Straight-edges.

These Rules are made of the best hardened and tempered steel, are true and straight on the edges, and are machine divided.



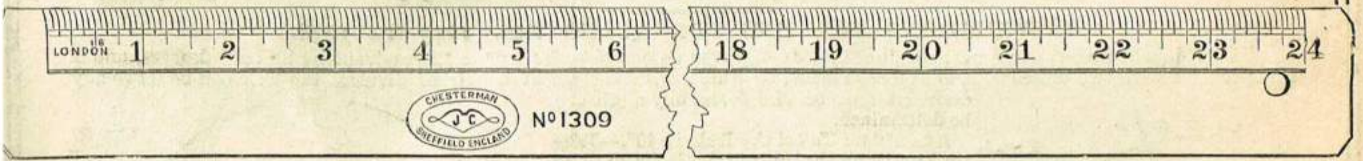
1660

No.		3	4	6	12in.
1655	Marked on one edge 8, 16, 32, 64ths	6d.	6d.	6d.	1/-
1656	Ditto two edges 8, 16, 32, 64ths	8d.	8d.	9d.	1/3
1657	Ditto two edges 16, 32, 64 ; 10, 20, 50, 100ths	1/-	1/-	1/-	1/6
1658	Ditto four edges 8, 16, 32, 64ths	—	1/-	1/3	1/9
1659	Ditto four edges 8, 16, 32, 64 ; 10, 20, 50, 100 ; 12, 24, 48, 96ths...	—	1/3	1/6	2/-
1660	Ditto two edges 16, 32, 64ths, millimetres and half-millimetres...	—	1/-	1/3	1/9
1661	Ditto four edges 16, 32, 64ths ; millimetres and half-millimetres and also Tapping and Spanner sizes	—	1/6	1/9	2/-
1662	Ditto two edges 16, 32, 64ths, and Tapping and Spanner sizes ...	—	—	1/-	1/6
1663	Ditto two edges 16, 32, 64ths, and Tapping and Spanner sizes on back	—	1/3	1/6	2/-

Tempered Flexible Steel Rules.

1664 These Rules are marked on two edges only, and are divided into 64ths throughout one edge, and into 32nds on the other, and are easily adapted to any curved or irregular surfaces, 4in. 1/6, 6in. 2/-, 12in. 2/6 each.

Steel Straight-edges.



1665 Bright Hardened and Tempered Straight-edges, with one edge bevelled, and with hole at end.

24 by $1\frac{1}{2}$ by $\frac{7}{100}$in. 4/6	30 by $1\frac{3}{4}$ by $\frac{8}{100}$in. 6/-	36 by $1\frac{3}{4}$ by $\frac{8}{100}$in. 7/6 each.
48 by 2 by $\frac{9}{100}$in. 10/6	60 by $2\frac{1}{4}$ by $\frac{9}{100}$in. 13/-	72 by $2\frac{1}{2}$ by $\frac{1}{10}$in. 18/6 each.

1666 Machine-divided into $\frac{1}{16}$ths, as illustration, Bright Hardened and Tempered Steel Straight-edges.

24 by $1\frac{1}{2}$ by $\frac{7}{100}$in. 7/6	30 by $1\frac{1}{2}$ by $\frac{7}{100}$in. 10/-	36 by $1\frac{3}{4}$ by $\frac{8}{100}$in. 11/6 each.
48 by 2 by $\frac{9}{100}$in. 16/6	60 by 2 by $\frac{9}{100}$in. 21/6	72 by $2\frac{1}{2}$ by $\frac{1}{10}$in. 28/6 each.

Pattern-makers' Contraction Rules in Boxwood and Steel.

1667 Best London-made Boxwood Contraction Rules, 24in. long, marked, Contraction for Iron and Brass, with Bevelled Edge marked Standard, with Scales, 3/6 each.

1668 Ditto ditto marked on four edges, one edge each for Iron, Brass, Steel, and Standard, 3/6 each.

1669 Best London-made Boxwood Contraction Rules, marked Standard, and also any one Contraction as may be required, 2ft. 3/-, 3ft. 4/-, 4ft. 5/6, 5ft. 6/6 each.

1670 Engine-divided Steel Contraction Rules for Pattern-makers, marked inches in 16ths, 24in. long by $1\frac{1}{8}$in. wide, Standard on one edge, and Single Contraction for Iron on other edge, 4/- each.

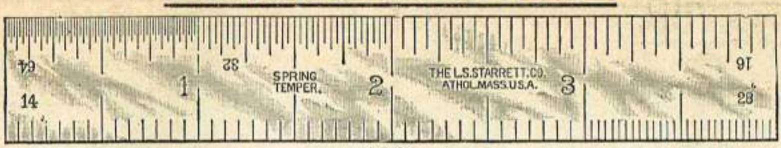
1671 Ditto ditto marked Standard on one edge, and Double Contraction for Iron on other edge, 4/- each.

1672 Ditto Ditto marked Standard on one edge, and Single Contraction for Brass on other edge, 4/- each.

1673 Ditto Ditto marked on four edges; one each Standard, Single and Double Contraction for Iron, and Single Contraction for Brass, 6/6 each.

1674 Engine-divided One Foot Steel Contraction Rules divided on four edges, two edges Standard into $\frac{1}{16}$ths and one edge Divided Contraction $\frac{1}{10}$ and $\frac{1}{8}$in. to the foot, 1/9 each.

Starrett's Steel Rules.



1675

All Steel Rules shown on this page, of whatever graduation, are sold at the following prices :—

Sizes	1	2	3	4	6	9	12	18	24	36in.
Prices	8d.	1/-	1/6	2/-	2/9	4/3	5/3	8/6	10/6	21/- each.

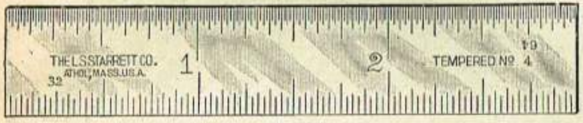
GRADUATIONS.—These Rules are divided into parts of inches as follows :—

	No. 1 Graduation.	**No. 2 Graduation.**	**No. 4 Graduation.**	**No. 7 Graduation.**
1st corner	10, 20, 50, 100	10, 20, 50, 100	64	64
2nd „	12, 24, 48	12, 24, 48	32	32
3rd „	16, 32, 64	16, 32, 64	16	16
4th „	14, 28	8	8	100

	No. 10 Graduation.	**No. 11 Graduation.**	**No. 12 Graduation.**	**No. 15 Graduation.**	**No. 16 Graduation.**
1st corner	32	64	50	10	32
2nd „	64	100	100	20	64
3rd „				50	50
4th „				100	100

No. 303 Rules, in 2, 3, 4, 6, 9, 12, 18, and 24in. lengths, of No. 4 graduation, are graduated across the end.

Spring-Tempered Rules.



1676

Lengths ... .. 1, 2, 3, 4, 6, 9, 12, 18, 24, 36, 48in.
Approximate widths $\frac{1}{2}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{4}$, $1\frac{1}{4}$in.
Thickness ... ... $\frac{3}{64}$in. or No. 18 gauge.

No. 300	Spring-tempered,	No. 4 graduation.	
No. 301	„	No. 1 „	
No. 302	„	No. 2 „	
No. 303	„	No. 4 „	with graduated end.
No. 307	„	No. 7 „	
No. 308	„	No. 15 „	
No. 309	„	No. 16 „	

No. 303 Rules are made in 2in. to 24in. lengths only.

Heavy Rules, Spring-Tempered.

1677

Lengths ... ... 6, 9, 12, 18, 24, 36in.
Approximate widths ... ... $\frac{3}{4}$. 1, $1\frac{1}{4}$, $1\frac{1}{4}$, $1\frac{1}{4}$, $1\frac{1}{2}$in.
Approximate thicknesses, about $\frac{1}{16}$in.

No. 410	Heavy, Spring-Tempered,	No. 4, graduation.
No. 417	... ...	No. 7 „

Spring-Tempered Flexible Rules.

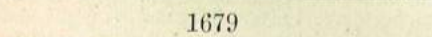
Graduated on One Side only.

1678

Widths From 1 to 12in., $\frac{1}{2}$in. wide; from 18in. to 48in., $\frac{3}{4}$in. wide.
Lengths 1, 2, 3, 4, 6, 9, 12, 18, 24, 36. 48in.

No. 320	Flexible,	No. 10 graduation.
No. 321	„	No. 11 „
No. 322	„	No. 12 „

Narrow Rules.



1679

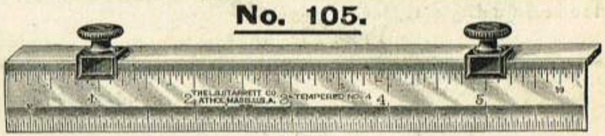
$\frac{3}{16}$in. wide, No. 18 gauge, spring tempered, graduated one corner each side whole length, either in 32nds and 64ths, 50ths and 100ths, or 64ths and 100ths.

Lengths, 4, 6, 9, 12in.

No. 330	Narrow,	No. 10 graduation.
No. 331	„	No. 11 „
No. 332	„	No. 12 „

For Prices see No. 1675, at Top of Page.

Starrett's Patent Key-seat Rule,
No. 105.


THE L.S.STARRETT CO. ATHOL MASS.U.S.A.
TEMPERED No. 4

1680

The improved feature in this Rule consists of a device for holding two straight-edges in the form of a box square (or key-seat rule) securely together. One of said straight-edges is a spring-tempered scale, with one edge bevelled, graduated in 8ths, 16ths, 32nds, 64ths, the other a plain straight-edge with two or three clamps (according to its length) which are operated by knurled eccentrics clamping corner and edge of straight-edge and scale together; thus, not only allowing the scale to be used as such independently from the other part, but being in two straight pieces, it admits of being made from spring-tempered stock and accurately ground, also of inserting in place of the regular width rule, a narrow auxiliary one, adapting it for use on very small shafts, etc. This narrow auxiliary straight-edge is either plain or graduated in 32nds or 64ths, and sent when ordered.

Prices.	each.
6in.	9/-
6in., with auxiliary straight-edge, graduated	12/-
9in.	12/-
9in., with auxiliary straight-edge, graduated	17/-

Key-seat Rules.

Brown & Sharpe Mfg. Co. Providence, R.I.

1681

Parallel lines for key-seats, mortices, etc., can be readily and accurately drawn with these rules on shafts not less than $\frac{5}{8}$in. in diameter.

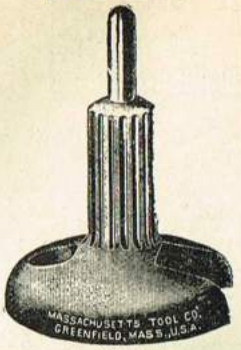
The edges are bevelled, and graduated to 32nds of an inch.

No. 254	Length 4in.	Price 10/6 each.
No. 256	„ 6in.	„ 12/6 „
No. 258	„ 8in.	„ 15/6 „

1682 Key-Seat Rules, Chesterman's Make, either as illustration or **V**-shape, 4in., 8/- each.

1683 Cheaper make Key-Seat Rules, planed inside and outside, 4in. 4/6, 5in 5/6, 6in. 6/6 each.

Precision Centre Punch, No. 65.

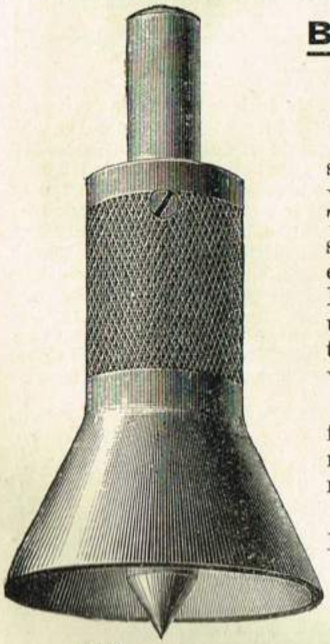

MASSACHUSETTS TOOL CO.
GREENFIELD, MASS., U.S.A.

1684

This little tool is one of the greatest conveniences in laying out precision centre work, for fine drilling that has ever been offered. It has a slot and a hole milled and drilled so that an exact centre can be verified, and at the same time the punch kept directly perpendicular to the space to be drilled; an absolute necessity in the finest class of work. Tool is well finished and one that will be most useful. Punch made from the best quality cast steel.

Price, 2/- each.

Bell Centering Punch.



1685

The annexed is a full-sized illustration of a very handy and useful Tool that we are now selling. It needs no explanation, as every Machinist knows its usefulness, and that his tools are incomplete without it.

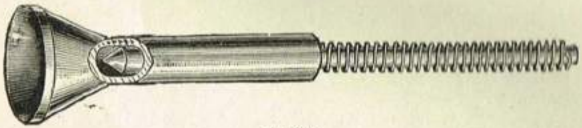
It is very accurate, finely finished, and made of the best material.

The capacity is up to $1\frac{1}{2}$in.

Weight, 5oz.

Price, 3/6 each.

Gun-metal Bell Centre Punches.



1686

1in., 2/6 each. 2in., 4/6 each.

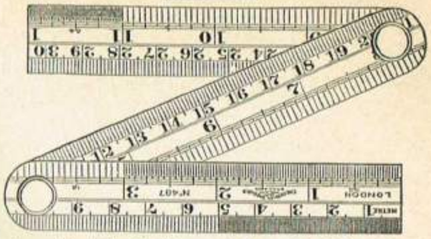
Starrett's Solid Steel Centre Punches.

1687 Black Finish, 9d. each. Nickel-plated, 1/- each. For illustration, see page 22.

Medium Quality Centre Punches, 4d. and 6d. each.

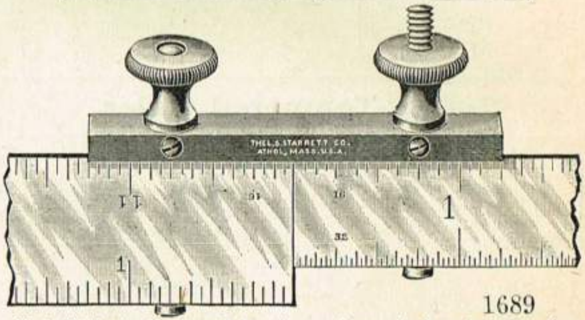
One Foot Three-Fold Steel Rule.

1688



Machine-divided, $\frac{3}{4}$in. wide. Divided inches into 16ths, 32ths, and 64ths. Centimetres into millimetres and half-millimetres. Scales, $\frac{1}{8}$in., $\frac{1}{4}$in., $\frac{3}{8}$in., $\frac{1}{2}$in., $\frac{3}{4}$in., and 1in., in neat case. 3/6 each.

Rule Clamps, No. 299.

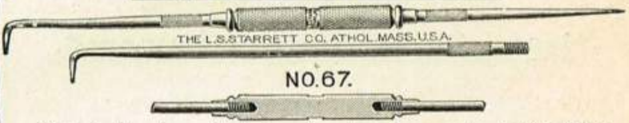

THE L.S.STARRETT CO.
ATHOL, MASS. U.S.A.

1689

This little tool is used to clamp two steel rules together, end to end, making one long rule. The rules may be of the same or different widths up to $1\frac{1}{4}$in. This clamp will be of special value to mechanics, whose tool chests will often not hold rules longer than 12in.

Price 2/- each.

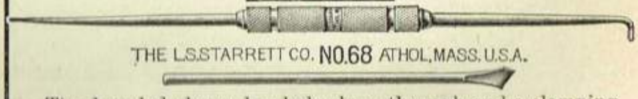
Improved Scriber.


THE L.S.STARRETT CO. ATHOL MASS.U.S.A.
NO.67.

This Scriber is made for mechanics who want a better thing than has been heretofore obtainable. These points are made of a fine grade of steel, nicely tempered. The knurled stock is of sufficient size to be easily held without cramping or turning in the fingers. The long bent point will be found a valuable auxiliary for reaching through holes, &c. Length, with short bent point, 9in.; with long point, 12in. All parts are interchangeable. The knurled sleeve is nickelled.

1690 Complete, price 2/- each; without long point, 1/6; straight point, long or short bent point, 6d. each. The tool will be sent complete unless otherwise ordered.

Improved Adjustable Sleeve Scriber.

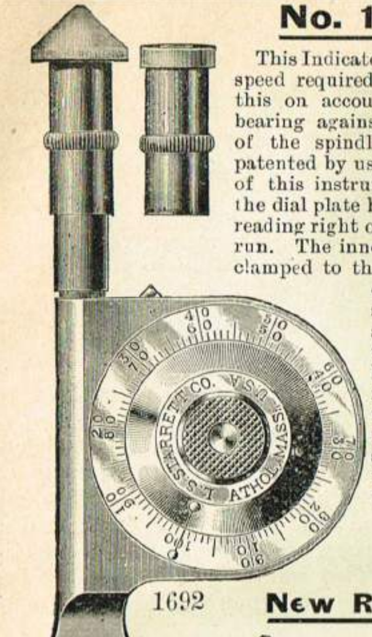

THE L.S.STARRETT CO. NO.68 ATHOL, MASS. U.S.A.

The knurled sleeve has hole clear through and a clamping device at each end, adapting it for slipping on or off different tools, securely holding them near to or away from the working point. The knurled sleeve is nickelled. This Scriber is made in two lengths, 8in. and 12in. Tool-makers will find the small size more desirable for general use, and the larger one for heavier work. For pattern-makers a Knife Scriber, made of a fine grade of steel, is supplied as an auxiliary.

1691 Either size, without knife point, price 2/3 each; knife point, extra, 8d. each; extra Scriber points, 10d. each.

The 8in., being the more popular size, will be sent (without knife point), unless otherwise ordered.

Starrett's High Speed Indicator, No. 104.



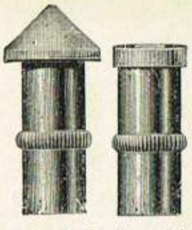
1692

This Indicator may be run at highest speed required without heating, and this on account of our frictionless bearing against which the inner end of the spindle revolves (a feature patented by us). The working parts of this instrument are encased, and the dial plate has two rows of figures, reading right or left, as the shaft may run. The inner plate is frictionally clamped to the revolving gear by a checked wafer-head screw. By a pressure and twist with the thumb the plate is loosened, when the O mark may be instantly moved to agree with the starting point, thus saving time revolving the spindle to bring it there.

Price 4/- each.
In Leatherette Case, 6/- each.

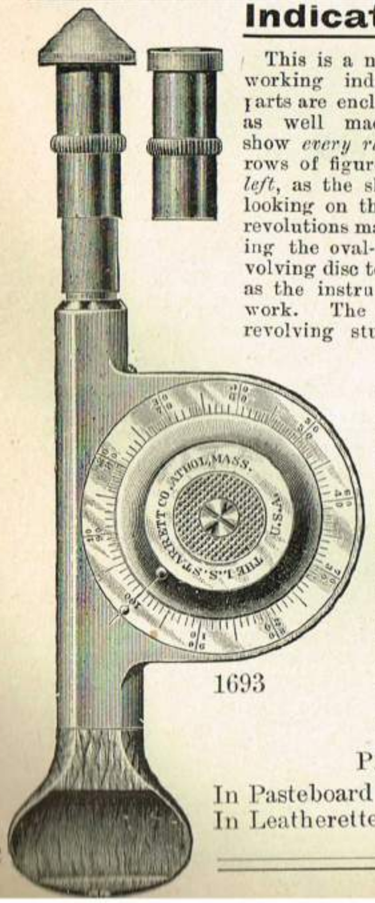
New Rubber Tips

For Pointed and Hollow Centres.



An important improvement, which we now apply to all of our Speed Indicators, consists in adding to the hardened steel-pointed spindle rubber tips for both pointed and centred shafts, which not only remove the jar and run smoothly, but produce stronger frictional contact between the shaft and the instrument.

Starrett's Improved Speed Indicator, No. 106.



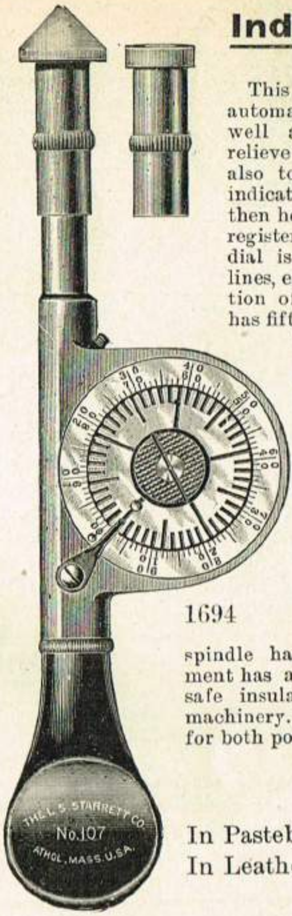
1693

This is a nicely-made and finely-working indicator. The working parts are enclosed like a watch, and as well made. The graduations show *every revolution*, and with two rows of figures read both *right* and *left*, as the shaft may run. While looking on the watch each hundred revolutions may be counted by allowing the oval-headed pin on the revolving disc to pass under the thumb as the instrument is pressed to its work. The dial is locked to a revolving stud—a slight thumb pressure and twist on the knurled eccentric releases it so that the indicator mark may be readily moved and locked to agree with the starting point, thus saving the necessity of turning the instrument to bring it there. The instrument is nickel-plated, and has a rosewood handle, so that it will not heat the fingers when run at high speed. Has our new Rubber Tips for both pointed and hollow centres.

PRICES.

In Pasteboard Box ...	6/- each.
In Leatherette Case ...	8/- „

Starrett's Registering Speed Indicator, No. 107.



1694

This instrument was devised to automatically register hundreds as well as units and tens, and thus relieve the mind from keeping tally; also to furnish a better registering indicator at a more reasonable cost then heretofore. The instrument will register 5,000 revolutions. The large dial is graduated into one hundred lines, each one representing a revolution of the spindle. The small dial has fifty lines cut upon its face, each representing one hundred revolutions of the spindle (or one complete turn of the large dial). A spring finger trip attached to the case engages with one of the lines in the small dial, and holds it from revolving until the large dial makes one complete turn, when the trip-pin passing under the spring trip lifts it, and the dial is frictionally carried along by the large plate one line, thus showing that one hundred revolutions of the spindle have been made. The instrument has a hard rubber handle, making a safe insulator when used on electrical machinery. It has our new rubber tips for both pointed and hollow centres.

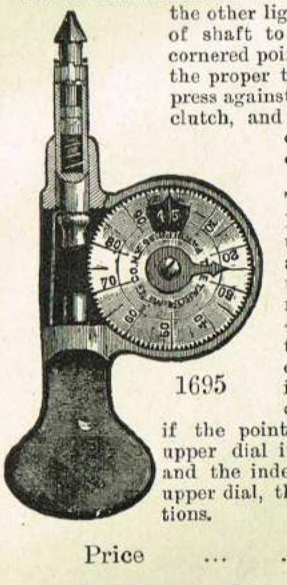
PRICES.

In Pasteboard box ...	12/- each.
In Leatherette case ...	14/- „

The Tabor Speed Indicator.

This Indicator is a good, simple Stop-motion Revolution Counter, and is sold at a price within the reach of all.

To SET TO ZERO.—Pull out the spindle till the worm touches the spring, and with the thumb and finger turn one dial over the other until the notch on the top dial is over 49 on the other dial, which is the zero or starting point, then push the spindle back into position, and slip the index pointer to the notch on top dial.



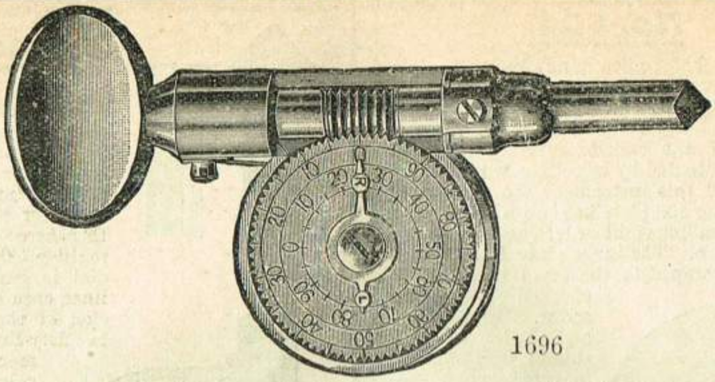
1695

To USE THE COUNTER.—Hold watch in one hand, and with the other lightly touch the centre of the end of shaft to be counted with the three-cornered point. When the watch indicates the proper time to begin to count instantly press against shaft, which will engage the clutch, and the registry will begin and continue till the pressure on end of shaft is relieved.

HOW TO READ THE DIALS.—The upper dial is graduated for 100 revolutions, and registers units: the lower dial is graduated for 49 revolutions of the top dial, and registers hundreds; making a continuous count of 4,900 possible. The reading on the under dial is through the opening in the upper dial. The index finger indicates the count on the upper dial; for instance, if the point in the opening through the upper dial indicates 45 on the lower dial, and the index finger points to 25 on the upper dial, the reading will be 4,525 revolutions.

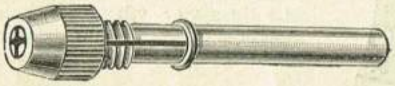
Price	5/6 each.
In Morocco Case	7/6 „

Weiss Double Speed Alarm Indicator.


1696

Weiss Double Speed Alarm Indicator. **Bell rings at every hundred revolutions,** On account of its pre-eminent advantages it is far in advance of any other heretofore offered. By its use, the revolutions of a shaft, turning **either to the right or to the left,** can be determined very **accurately, quickly and easily,** It is always in the proper position to be applied to the shaft, **it requires no turning to zero.** Once in place, it needs no further attention. It is immaterial whether the spindle turns to the right or left. Friction is reduced to a minimum by the use of a hardened stub steel socket and spindle. The bell rings at every hundred revolutions of the spindle, relieves your eye, and you can keep your eye solely on the watch while your ear registers the successive hundreds. This makes it indispensable for use in dark places. No confusion, no worry, no division of attention, no strain upon the mind. Nicely finished, nickel-plated. Price **6/-** each.

Chucks.



Pioneer Drill Chucks.

1697	No. 1.	To take in up to $\frac{1}{16}$in.	9d.	each.
1698	No. 2.	,, ,, ,, $\frac{1}{8}$in.	1/6	,,
1699	No. 3.	,, ,, ,, $\frac{5}{32}$in.	2/6	,,

American Pattern Grip Jaw Lathe Chuck.

1700 Adjustable to take in up to $\frac{3}{8}$in. 2/- each.

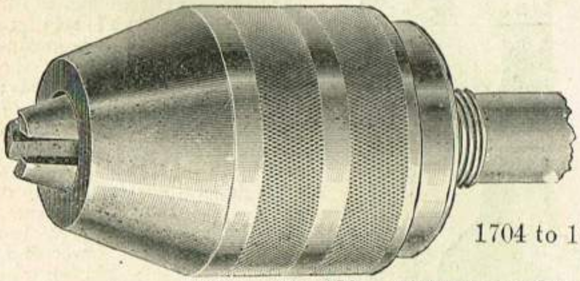
Star Chucks.

Nos. 5, 6 and 7.

The Chuck illustrated above has three steel jaws carefully adjusted in a socket to keep them in place, and so arranged as to open and close with the loosening or tightening of the Chuck upon the spindle. This is a thoroughly good and substantial Chuck at a low price. Handsomely polished and nickel-plated.

1701	No. 5	holds from 0 to $\frac{3}{16}$in. inclusive;	has shank $1\frac{1}{2}$in.	by $\frac{1}{2}$in.	Price 4/6	each.
1702	No. 6	,, ,, 0 ,, $\frac{17}{64}$in. ,,	,, ,, $3\frac{3}{8}$in.	,, $\frac{41}{64}$in.	,, 6/6	,,
1703	No. 7	,, ,, 0 ,, $\frac{1}{2}$in. ,,	,, ,, $4\frac{1}{2}$in.	,, $\frac{7}{8}$in.	,, 12/-	,,

Goodell Drill Chucks.



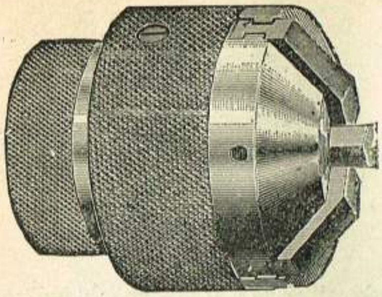
Patented August 13, 1895.

1704 to 1708

Realizing the great demand for a Drill Chuck of moderate cost and good quality, we take pleasure in offering one we are confident will meet all requirements. No spanner wrench is required with this Chuck. It can be tightened or loosened easily without one. The shank or spindle is arranged to receive a stud which, as the shell is turned, forces the jaws forward and tightens the Chuck. The three hardened steel jaws are held apart by separating springs which draw the jaws back as the Chuck is loosened. Well finished, strong, accurate.

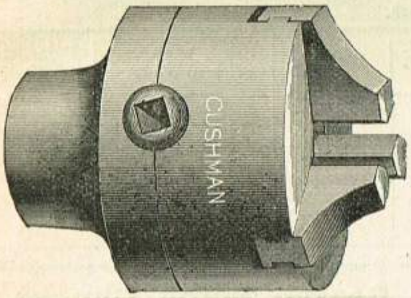
1704	No. $13\frac{1}{2}$.	Holds from 0 to $\frac{1}{16}$in.;	has shank $\frac{1}{2}$in.	Price 4/-	each.
1705	No. 14.	,, ,, 0 ,, $\frac{5}{32}$in.;	,, ,, $\frac{1}{2}$in.	,, 4/6	,,
1706	No. 15.	,, ,, 0 ,, $\frac{1}{4}$in.;	,, ,, $\frac{1}{2}$in.	,, 5/6	,,
1707	No. $15\frac{1}{2}$.	,, ,, 0 ,, $\frac{3}{8}$in.;	,, ,, $\frac{1}{2}$in.	,, 8/-	,,
1708	No. 16.	,, ,, 0 ,, $\frac{1}{2}$in.;	,, ,, $\frac{1}{2}$in.	,, 11/6	,,

The Acme Drill Chuck.



1709 Improved Pattern Acme Chuck, Self-tightening, holding Drills 0 to ½.
Price 12/6 each.

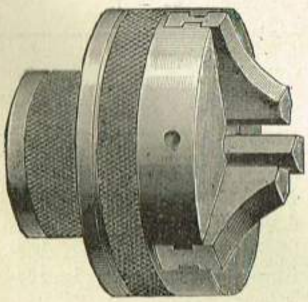
Cushman's Key Drill Chuck.



1710 This Chuck has been improved in every part. It has a new style socket pinion that projects slightly through the outside of the Chuck. The working parts are of steel. The jaws are ground true after tempering, and every Chuck is carefully tested. We supply them with either No. 1, No. 2, No. 3 Jaws, or with two sets of Jaws.

One set of Jaws,	No. 1.	0 to ½in.,	price	18/6
,, ,,	No. 2.	1/64 to ⅝in.	,,	24/-
Two sets of Jaws,	No. 1.	0 to ½in.	,,	24/-
,, ,,	No. 2.	1/64 to ⅝in.	,,	27/6

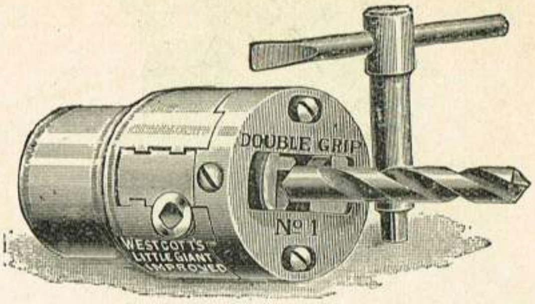
The Peerless Drill Chuck.



1711 This is one of the best Light Chucks on the Market, holds Drills 0 to ½.

Price 12/6 each.

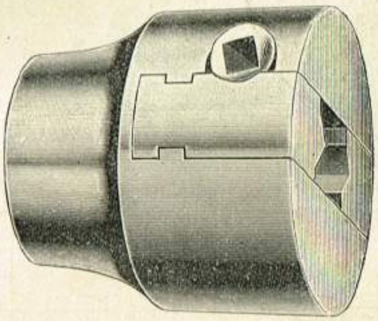
Westcott's Improved Little Giant Drill Chucks.



1712 This Chuck has no projections. The jaws and screws are all within the body. The jaws are of the best tool steel, carefully hardened. A guard ring prevents the jaws from being opened so as to take in larger work than is designed for the Chuck. It is very powerful, and is guaranteed to hold true and not to injure or shear the finest Drill. It holds round or square work, and there is no Chuck equal to it for holding wood-boring tools. The hole in the hub is made to fit the Morse Taper, but can be bored out and threaded to suit the customer's templet at a small cost.

No.	Diameter.	Holding Drills.	Price.
00	1¼in.	0 to ¼in.	23/-
0	2¼in.	0 to ½in.	26/-
1	2¾in.	0 to ⅝in.	29/6
2	3½in.	0 to 1in.	32/6
2½	4in.	0 to 1in. (extra strong)...	36/-
3	6in.	0 to 1½in.	58/6
4	6½in.	0 to 2in.	66/6

Reid Drill Chucks.



1713

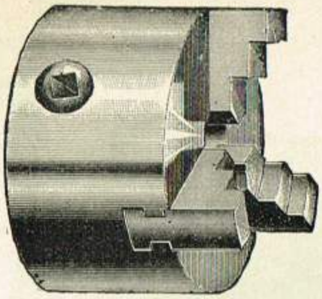
These Chucks have solid Jaws with three bearings on the Drill. The Frames are made of steel. Screws and Jaws from the best crucible steel.

PRICES.

No. 0	Holding from	0 to ½in..:. ...	17/6
No. 1	,,	0 to ¾in.... ...	23/6
No. 2	,,	0 to 1in.... ...	30/-

Chucks—*continued.*

Amateurs' Geared Scroll Chuck.

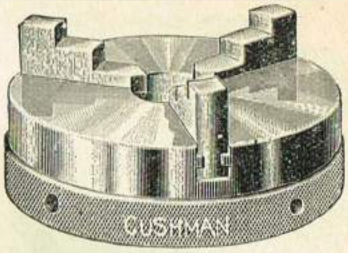


1714

This cut shows a new design of Chucks for foot lathes and light work. They are equally well made as the larger Geared Scroll Chucks. Each Chuck has one socket pinion which projects but very little beyond the outside. The 2in. is made either for fitting a taper plug or face-plate. The 2¼in. is for face plate only. We supply them with either No. 1 or No. 2 Jaws, or Both Sets of Jaws. When not specified, No. 1 Jaws will be sent as in general use.

Diameter.	Weight.	Price, with One Set of Jaws.	Price, with Two Sets of Jaws.
2in.	1½lb.	18/6 each.	23/6 each.
2½in.	2lb.	22/- ,,	26/6 ,,

Amateurs' Lever Chuck.



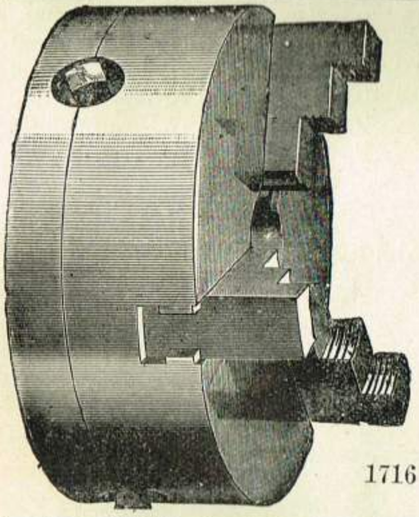
1715

These Chucks, although designed for light work, being made of first-class material, are suitable for any work within their capacity. For small lathes there is nothing better made, and the price is very low for such superior work.

The 2in. is made with a hub in which is a taper hole to which an arbor may be fitted. The other sizes are fitted for a face-plate in the usual way, and screws are supplied for fastening to the plate.

These Chucks may be operated by hand, but a lever is furnished with each Chuck, to use when an extra grip is required. We supply them either with No. 1 or No. 2 Jaws, or with Two Sets of Jaws.

Diameter.	Weight.	Price, with One Set of Jaws.	Price, with Two Sets of Jaws.
2in.	1lb.	14/- each.	18/- each.
3in.	2lb.	17/- ,,	21/- ,,
4in.	3lb.	20/- ,,	25/- ,,
5in.	5lb.	23/6 ,,	28/- ,,



1716

Cushman's Geared Scroll Chucks.

Improved Three-pinion Geared Scroll Chucks.

These Chucks have been constantly improved up to the present time, and now stand, owing to their accuracy, construction, and durability, unrivalled as Universal Chucks for general use.

The working parts are made of forged steel, and every attention is paid to the mechanical construction to make them right in every respect.

All are now made with three pinions, are handier to use by having a pinion always within reach, and are perfectly balanced—an advantage when required for high-speed machines.

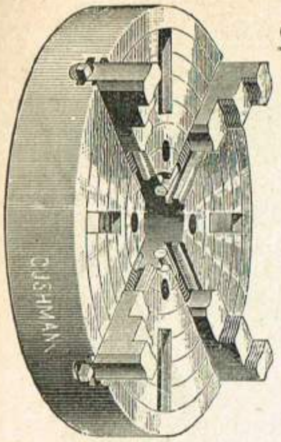
All jaws of No. 2 and No. 3 style are ground true after they are hardened.

We carry in stock a full line of these Chucks with No. 1 Jaws, No. 2 Jaws, and with Two Sets of Jaws (No. 1 and No. 2). A steel key and screws for attaching to face-plate are furnished with each Chuck.

When ordering, be particular to state the style of jaws wanted. Unless otherwise specified, Chucks with No. 1 Jaws will be sent.

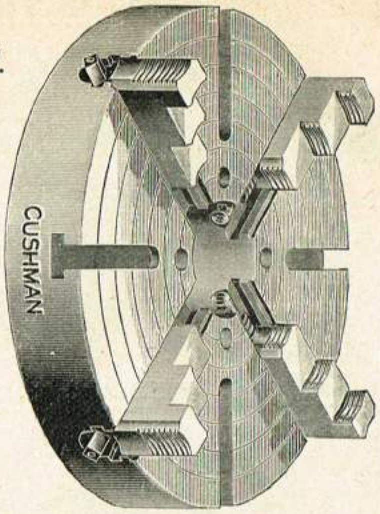
Size.	Diameter of Hole.	Weight.	Price, One Set of Jaws.	Price, Two Sets of Jaws.	Extra Sets of Jaws, Ordered without Chuck.
2½	⅝in.	2lb.	23/- each.	28/- each.	7/- each.
3	⅝in.	3lb.	31/- ,,	37/6 ,,	9/6 ,,
4	1in.	6lb.	37/6 ,,	45/- ,,	11/6 ,,
5	1¼in.	10lb.	47/- ,,	56/- ,,	14/- ,,
6	1 9/16in.	14lb.	56/- ,,	67/6 ,,	17/- ,,
7½	2in.	22lb.	62/- ,,	75/- ,,	21/- ,,
9	2½in.	36lb.	75/- ,,	90/- ,,	28/- ,,
10½	3in.	51lb.	84/- ,,	101/- ,,	33/6 ,,
12	3in.	62lb.	93/- ,,	112/6 ,,	37/6 ,,
15	3¼in.	78lb.	125/- ,,	150/- ,,	47/- ,,

Cushman's Independent Four-jaw Chucks, with Reversible Jaws.



1716

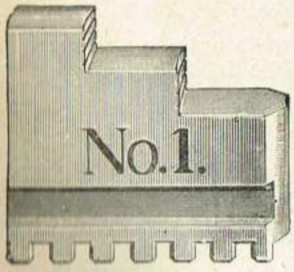
These chucks are much heavier than the old style, and are guaranteed to be the best Independent Chucks made. The 12in. and larger have slots in the face, as in the illustrations. The screws of steel have long bearings at each end, and, in case of the square getting worn, may be reversed and the other end fitted to the key. The jaws may be quickly reversed in the Chuck for inside grip. Keys and bolts are supplied with each Chuck.



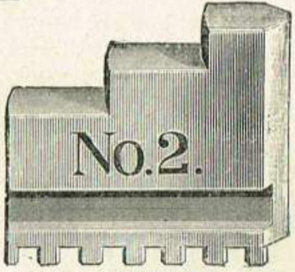
1717 Sizes over 12in.

Size.	Weight.	Diam. of Hole.	Price.	Size.	Weight.	Diam. of Hole.	Price.
4½ in.	6 lb.	1 in.	£2 7 6	16 in.	86 lb.	3 in.	£6 7 6
6 "	11 "	1¾ "	3 0 0	18 "	113 "	4 "	7 7 0
8 "	25 "	1⅞ "	3 14 0	20 "	132 "	4 "	8 2 6
10 "	35 "	2 "	4 7 6	22 "	172 "	4¾ "	9 10 0
12 "	54 "	2⅞ "	5 0 0	24 "	193 "	4¾ "	10 16 0
14 "	72 "	3 "	5 14 0	26 "	225 "	4¾ "	12 10 0

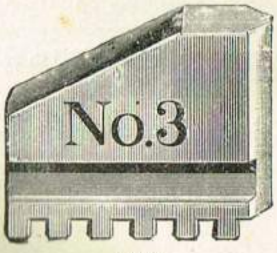
Jaws.



1718



1719



1720

We illustrate here three different styles of Jaws. No. 1 Jaws, designed for ordinary lathe work, are the style most generally used. With them pieces as large as the chuck may be held.

No. 2 Jaws are designed for drills, rods, and fine work. Rings, etc., can be held by the inside while the outside is being finished.

No. 3 Jaws, furnished to order only, with the geared scroll chucks, are designed for use when the corners of the No. 2 Jaws would be in the way. They do not extend as far from the face of the chuck as the other styles.

When no style of Jaws is mentioned, No. 1 will always be sent. When ordered with two sets of Jaws, we send a set of Nos. 1 and 2.

The Fitting of Chucks.

The old style of fitting lathe chucks by making them screw directly on to the spindle nose has several disadvantages. The Chuck so fitted cannot usually be used on any other lathe, and often runs "out of truth" even on the lathe to which it belongs. The method of fitting used in connection with the Chucks shown in this book obviates both of these difficulties, and is in every way better practice. A small face-plate is screwed to fit the lathe spindle and then turned true in its place and fitted snugly into a recess provided at the back of the Chuck. Flush fitting bolts secure the Chuck solidly to the plate, but allow of its ready removal if required for use on another lathe, to which it can be attached in like manner with the certainty of its running true.

Drill Chucks are fitted to the machine on which they are to be used by means of a taper plug fitted to the spindle like a lathe centre. The projecting end is turned to suit a taper hole in the back of the Chuck, into which it is then driven. This method is simple and satisfactory.

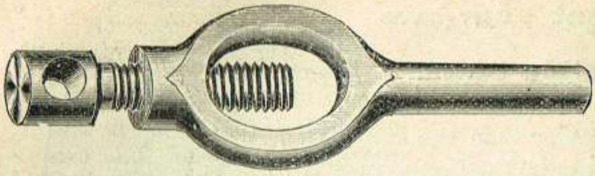
Cost of fitting Chucks ranges from 5/- to 20/-, according to size and style.

Repair Parts.

New jaws can be procured to replace worn or broken ones, but a pattern jaw should in all cases be sent to ensure the supply of suitable ones, as these parts are not made interchangeable.

We keep a variety of screws, pinions, etc., in stock.

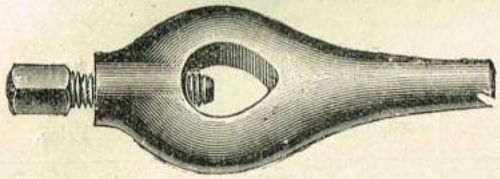
Lathe Carriers.



1722 Best Malleable Iron Body, Steel Screw with hardened point.

½	¾	1	1¼	1½	1¾	2	2½	3in.
1/-	1/4	1/8	2/2	2/9	3/3	4/-	5/-	7/- each.

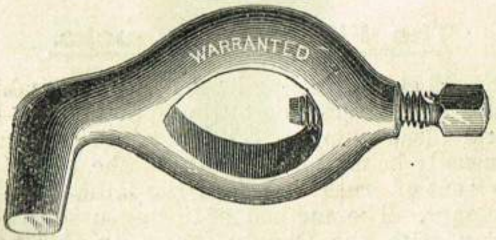
Drop-forged Steel Lathe Dogs.



1723

⅜	½	¾	1	1¼	1½	1¾	2	2½	3in.
1/3	1/6	1/8	2/-	2/4	2/9	3/6	4/6	5/6	7/- each.

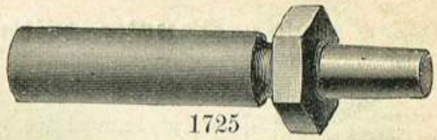
Drop-forged Bent Tail Lathe Dogs.



1724

⅜	½	¾	1	1¼	1½	1¾	2	2½	3in.
2/-	2/6	3/-	3/6	4/-	4/6	5/3	6/-	6/9	7/6 each.

Patent Plug Arbor for Drill Chucks.



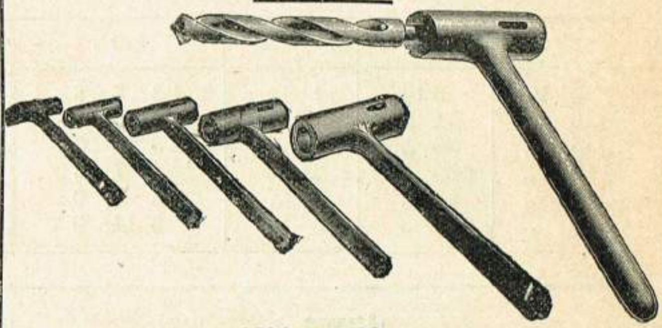
1725

These Arbors are left with one end blank for fitting to machine, and with the other end already fitted to our chucks. By turning the nut, the chuck may be easily forced off the arbor or the arbor drawn from the spindle.

No. 2 fits the 2in. Geared Scroll and the 2in. Lever, the No. 1 Key Drill, the Peerless, and the Acme Chucks.

Price 4/3 each.

Armstrong Drill and Reamer Holder.



1726 to 1729

These holders are a most ingenious and practical method of utilising Twist Drills and Reamers as boring tools in lathe work. The Sockets are Morse Taper.

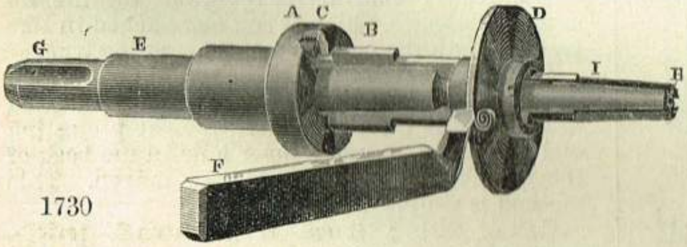
1726 No. 1 Holds Drills ¼in. to $\frac{9}{16}$in., Weight 1lb. 5oz. Price 4/- each

1727 No. 2 Holds Drills $\frac{19}{32}$in. to $\frac{29}{32}$in., Weight 2lb. 6oz. Price 5/3 each.

1728 No. 3 Holds Drills $\frac{15}{16}$in. to 1¼in., Weight 4lb. 6oz. Price 7/- each.

1729 No. 4 Holds Drills $1\frac{9}{32}$in. to 2in., Weight 7lb. 8oz. Price 11/- each.

Le Count's Patent Expanding Mandrel.



1730

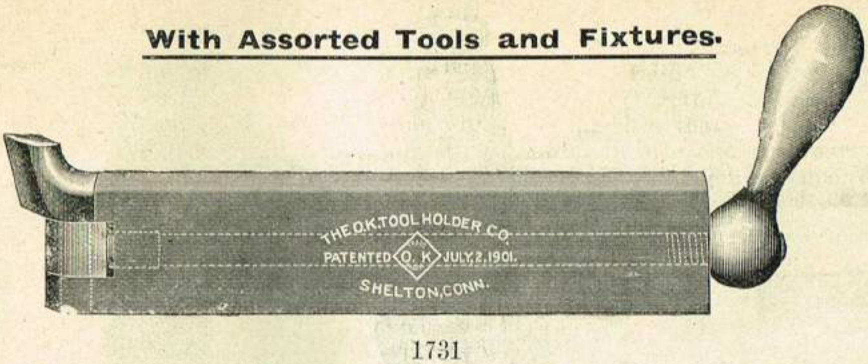
This illustration shows the form in which all the smaller sizes of Mandrels are now made. Nos. 4 and 5 are still made with a nut and screw to work the sliding keys. They are all made of steel, with the working parts carefully tempered.

DIRECTIONS.—To tighten the work, drive with a copper hammer, or a piece of soft iron or brass, on the large end (not too hard) to loosen on small end. You can take a good cut by driving with a 1oz. copper or brass hammer, and not drive hard.

No. 0 (Amateur) takes any hole, inclusive, between	⅜in. and 1in.	Price, £1	5	0
No. 1 ,, ,, ,,	½in. and 1in.	,, 2	0	0
No. 2 ,, ,, ,,	1in. by 1½in.	,, 2	16	0
No. 3 ,, ,, ,,	1½in. and 2in.	,, 3	12	0
No. 4 ,, ,, ,,	2in. and 3in., with Nut and Screw	,, 8	0	0
No. 5 ,, ,, ,,	3in. and 4in., ,, ,,	,, 11	0	0

The "O.K." Patent Tool-holder,

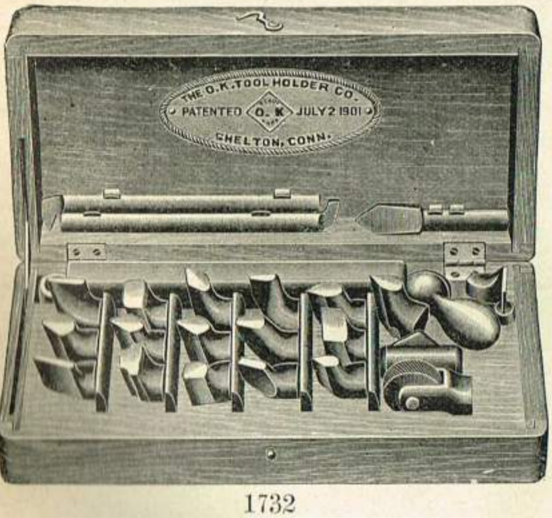
With Assorted Tools and Fixtures.


THE O.K. TOOL HOLDER CO.
PATENTED O.K. JULY 2, 1901.
SHELTON, CONN.

1731

The "O.K." Tool-holder with assorted tools and fixtures possesses peculiar advantages, and advantages that make it especially useful when it is necessary to change tools often. Any of these tools can be removed from the holder and another substituted without disturbing the holder when once placed in position on the lathe or shaper. This change can be made instantaneously, making a time saving of no mean moment. With this Holder we furnish all shapes of tools in common use, and are not limited to one special shape as is usually the case. The holder is so constructed as to hold the tools as firmly as though they were a portion of the holder itself, and a quarter turn of the handle serves to release the tool and allow another to be inserted. These tools are drop-forged from the best quality of Jessop's Tool Steel and are accurately ground for clearance. Any tool can be furnished promptly and at a price less than the cost of re-dressing and grinding an old style tool. When you are tired of forging tools on the grindstone, investigate these tools.

Complete Sets—A, B, and C.


THE O.K. TOOL HOLDER CO.
PATENTED O.K. JULY 2 1901
SHELTON, CONN.

1732

PRICES OF COMPLETE SETS.

Size A, $\frac{3}{8}$in. by $\frac{3}{4}$in.	45/-
,, B, $\frac{1}{2}$in. by 1in.	50/-
,, C, $\frac{5}{8}$in. by $1\frac{1}{4}$in.	60/-

Number, Name, and Price of "O.K." Tools.

Sizes A, B, and C.

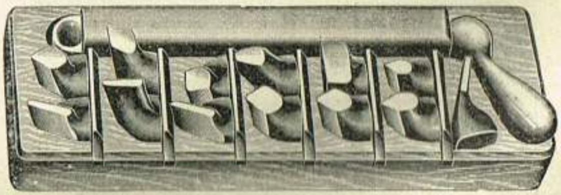
No.	Tools.	Size A	B	C.
1	Left Side Tool	11d.	1/-	1/3
2	Right Side Tool, bent	11d.	1/-	1/3
3	Left Side Brass Tool	11d.	1/-	—
4	Right Side Brass Tool, bent	11d.	1/-	—
5	Left Offset Diamond Point	11d.	1/-	1/3
6	Right Offset Diamond Point	11d.	1/-	1/3
7	Right Side Parting Tool, bent	11d.	1/-	1/3
8	Straight Brass Tool	11d.	1/-	—
9	Left Diamond Point	11d.	1/-	1/3
10	Straight Roughing Thread Tool	1/4	1/6	1/10
11	Mushet Diamond Point	1/6	1/10	2/1
12	Right Diamond Point	11d.	1/-	1/3
13	Straight Finishing Thread Tool	1/4	1/6	1/10
14	Right Thread Tool, bent	1/4	1/6	1/10
15	Female Radius, $\frac{3}{32}$in., $\frac{1}{8}$in., $\frac{5}{32}$in.	2/6	2/8	2/8
16	Male Radius, $\frac{3}{32}$in., $\frac{1}{8}$in., $\frac{5}{32}$in.	2/6	2/8	2/8
17	Flat Nose Tool	11d.	1/-	1/3
18	Inside Boring Fixture	4/9	5/3	5/9
19	Knurling Fixture	4/9	5/3	8/-
20	Drawbolt	9/6	10/6	13/-
21	Handle			
22	Holder			
23	Spotting Tool	1/-	1/4	1/6
24	Inside Boring Tool	1/-	1/4	1/6
25	Inside Threading Tool	1/-	1/4	1/6
26	Case	4/9	5/6	6/-
27	Working Set Case	1/6	1/6	2/-

In Size C we omit Brass Tools Nos. 3, 4, and 8 and substitute Nos. 1, 2, and 12 in their place.

Working Sets—A, B, and C.

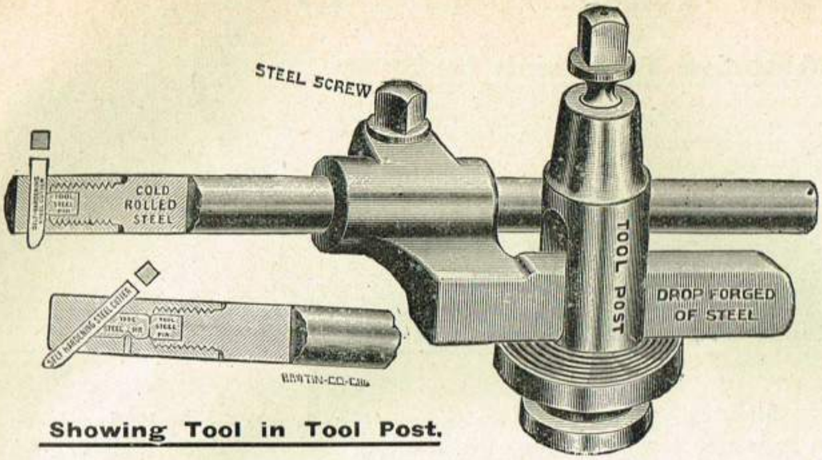
Working Sets A, B, and C consist of a Holder, Case, and 13 Assorted Tools. The object of the Working Set is to reduce the cost of equipping a shop. A Working Set costs only one-half the price of a Complete Set. All tools are interchangeable, and additional tools can be had as required. See price list as above.

Prices of Working Sets: Size A 22/6, Size B 25/-, Size C 30/- per Set.

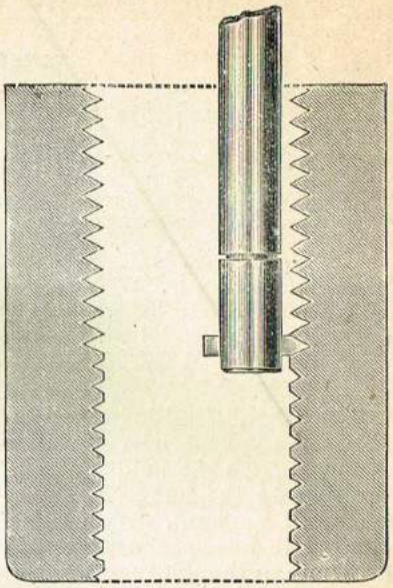


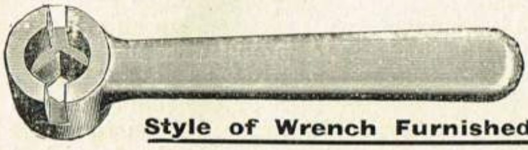
1733

The Armstrong Boring Tool.



Showing Tool in Tool Post.





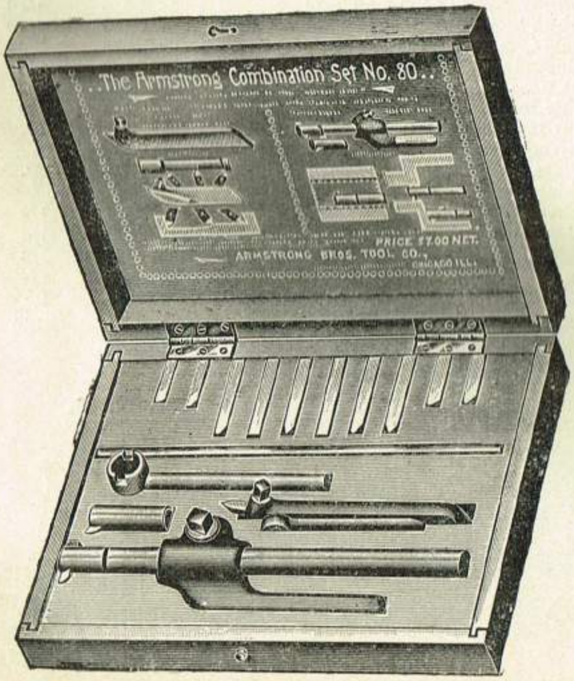
Style of Wrench Furnished with Tool.

Showing Tool Cutting a Thread.

1734 This Tool is made entirely of steel, the wearing parts are hardened, and it is finished in a first-class manner. The bar can be extended from its holder to any desired length to suit depth of hole. The cutters are made of stock sizes of self-hardening steel and can be ground for V or square thread, double end, round nose, or any desired shape. They can easily be made by simply grinding end of piece of self-hardening steel to the proper shape on a dry emery wheel, then nick all around on corner of stone, and break off with sharp blow of hammer. We guarantee this tool to be as stiff and to take as heavy a cut as any forged tool of same size, and as it will take the place of about one dozen forged tools the great economy effected by its use can readily be seen. Each set is put up in a neat box. It consists of holder and bar with straight and 45 degree end caps, two cutters (ground for boring), wrench and a piece Self-Hardening Steel, about enough for ten extra cutters.

PRICES.

No.	Size of Shank.	Size of Bar.	Size of Cutter.	Weight.	Price Complete.	Extra Cutters.
00B	$\frac{5}{16}$ by $\frac{5}{8}$in.	$\frac{1}{2}$in. diam.	$\frac{3}{16}$in. square	1lb. 12oz.	12/6	6d. each.
8	$\frac{3}{8}$ by $\frac{3}{4}$in.	$\frac{9}{16}$in. ,,	$\frac{3}{16}$in. ,,	2lb. 0oz.	12/6	6d. ,,
9	$\frac{1}{2}$ by 1 in.	$\frac{3}{4}$in. ,,	$\frac{1}{4}$in. ,,	4lb. 0oz.	15/-	8d. ,,
10	$\frac{5}{8}$ by 1$\frac{1}{4}$in.	$\frac{15}{16}$in. ,,	$\frac{5}{16}$in. ,,	7lb. 5oz.	20/-	10d. ,,
11	$\frac{3}{4}$ by 1$\frac{1}{2}$in.	1$\frac{1}{8}$in. ,,	$\frac{3}{8}$in. ,,	12lb. 5oz.	28/-	1/3 ,,

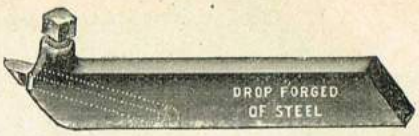

The Armstrong Combination Set No. 80.
PRICE $7.00 NET.
ARMSTRONG BROS. TOOL CO.
CHICAGO ILL.

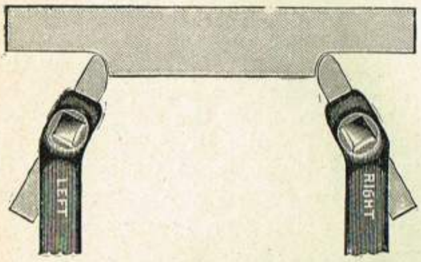
The "Armstrong" Combination Set.

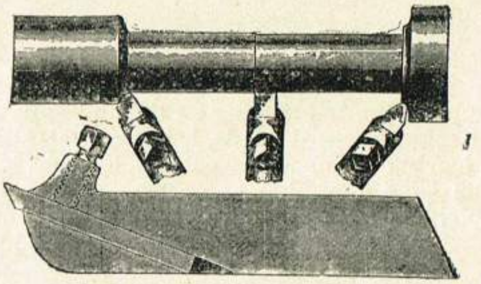
1735 This set comprises:—One No. 8 Boring Tool, with Wrench and six Cutters; one No. 0 Lathe and Shaper Tool, with Wrench and six Cutters; one piece Special Self-hardening Steel, 9in. long. Put up in hard-wood polished case.

No. 80.—Price 30/-

The "Armstrong" Lathe Tool Holder.







These Holders and Tools are especially suitable for the American Lathes. The holder is drop-forged of steel, and case-hardened. The top and bottom are planed square with the sides. The hole for receiving the cutters is drilled and squared from the solid, ensuring a straight and true seat. The set-screw is tool steel, with tempered point. The cutters are made of special self-hardening steel, and the points ground to shape. With this steel speeds and feeds can be increased, and grinding will be required less frequently. Self-hardening steel can be made extra hard by heating to redness, aud cooling off in cold blast. It will be found an advantage to oilstone the edge of the cutters before using; it obviates all danger of steel being burnt or worked badly; it saves the men from going to the tool dresser, machines standing idle, etc., etc. With it no stock of heavy steel need be carried, and many points of various shapes can be kept on hand, ready for instant use, which will take up but little room, and enable the user to turn out more and better work.

All sizes, except Nos. 00 and 0, can be supplied either right or left hand, or straight.

THE ARMSTRONG TOOL HOLDER, NO. A 0.
For General use on Lathes and Shapers.
PAT. FEB. 28. 99

1736 The "Armstrong" Tool Holder. This set consists of a holder $\frac{3}{8}$ by $\frac{3}{4}$ by 5in., with wrench and 9 cutters, in a polished hardwood-case.

Price 12/6

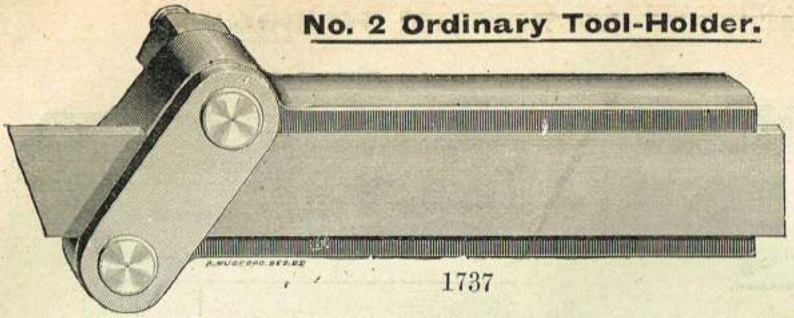
Complete with Drop-forged Wrench and two Self-hardening Steel Cutters, ground to shape.

No	Size of Holder.	Size of Cutter.	Weight.	Price Complete.	Extra Cutters.
00	$\frac{5}{16}$ by $\frac{5}{8}$ by $4\frac{1}{2}$in.	$\frac{3}{16}$in. square	— 7oz.	6/9	5d. each
0	$\frac{3}{8}$ by $\frac{3}{4}$ by 5in.	$\frac{1}{4}$in. "	— 12oz.	7/-	6d. "
1	$\frac{1}{2}$ by 1 by 6in.	$\frac{5}{16}$in. "	1lb. 4oz.	7/6	9d. "
2	$\frac{5}{8}$ by $1\frac{1}{4}$ by 7in.	$\frac{3}{8}$in. "	2lb. 0oz.	9/6	1/1 "
3	$\frac{3}{4}$ by $1\frac{1}{2}$ by 8in.	$\frac{7}{16}$in. "	3lb. 4oz.	12/6	1/6 "
4	$\frac{7}{8}$ by $1\frac{5}{8}$ by 9in.	$\frac{1}{2}$in. "	4lb. 8oz.	16/-	1/11 "
5	1 by $1\frac{3}{4}$ by 11in.	$\frac{5}{8}$in. "	7lb. 8oz.	20/-	2/9 "
6	$1\frac{1}{4}$ by 2 by 13in.	$\frac{3}{4}$in. "	11lb. 8oz.	30/-	4/2 "
7	$1\frac{1}{2}$ by $2\frac{1}{4}$ by 16in.	$\frac{7}{8}$in. "	19lb. 8oz.	50/-	7/6 "

Extra Warranted Self-hardening Steel, in 3-ft. lengths	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$in.
Prices for 3ft. lengths	2/3	2/9	3/9	5/6	7/6	9/6	13/6	20/- each.

Slate Cutting-off Tools.

No. 2 Ordinary Tool-Holder.


1737

This Tool consists of Holder and movable Blade and Cutter. The Holder is drop-forged from steel and case-hardened. The under edge of Holder is extended, giving Blade firm support directly under cut. The Blades are 6in. long, $\frac{7}{8}$in. wide, milled and ground on both sides to give proper clearance. The top, or cutting edge, and bottom are ground square to gauge of slot in Holder: hence the blades used in this style of Holder require grinding on the end only. By our process of hardening we secure a blade superior to the regular forged blade, because after hardening the entire blade we draw the temper in the lower half, leaving the upper, or cutting, edge, as hard as fire and water will make it. This gives the hard cutting edge a cushion or support of soft, tough metal, renders the blade more easily ground, more durable, less easily broken than if left hard as the tool-maker leaves the forged tool.

Price of No. 2 Holders and $\frac{1}{8}$in. blade, 10/6 each. Shank of Holder, $1\frac{1}{8}$in. by $\frac{1}{2}$in.

Blades for Slate's Improved No. 2 Tools.

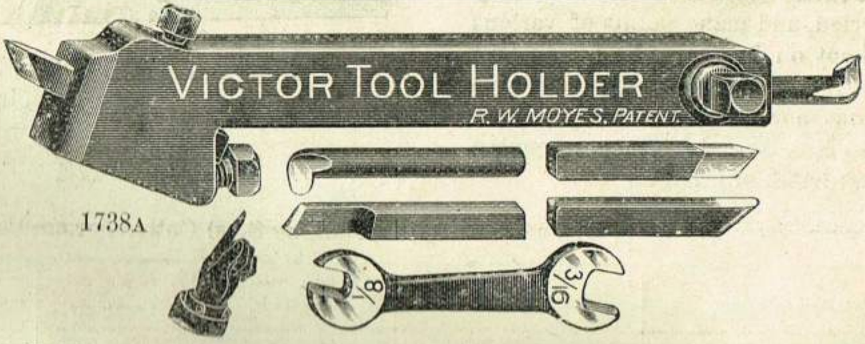
$\frac{1}{16}$in.	price 1/3 each.	$\frac{5}{32}$in.	price 1/6 each.	$\frac{7}{32}$in.	price 1/11 each.
$\frac{3}{32}$,, ...	,, 1/3 ,,	$\frac{3}{16}$,, ...	,, 1/8 ,,	$\frac{1}{4}$,, ...	,, 2/1 ,,
$\frac{1}{8}$,, ...	,, 1/3 ,,				

Armstrong Cutting-off Tools.

1738 The "Armstrong" Cutting-off Tool is very similar in design to the "Slate," as shown above, and is especially adapted for the economical use of self-hardening steel. The Holder and Bolts are made of steel, and hardened. The Cutters are made of special grade self-hardening steel, rolled bevelled on both sides, giving the proper clearance to ensure a clean-cutting tool. The blades require grinding on the cutting end only.

No.	Size of Holder.	Size of Blades.	Price, complete.	Extra Blades.
20	$\frac{3}{8}$ by 1 by 5in.	$\frac{3}{32}$ by $\frac{5}{8}$ by $5\frac{1}{2}$in.	7/-	1/1
21	$\frac{1}{2}$ by $1\frac{1}{8}$ by 6 ,,	$\frac{1}{8}$ by $\frac{3}{4}$ by $6\frac{1}{2}$,,	7/6	1/6
22	$\frac{5}{8}$ by $1\frac{3}{8}$ by 7 ,,	$\frac{1}{8}$ by $\frac{7}{8}$ by $7\frac{1}{2}$,,	9/6	2/-
23	$\frac{3}{4}$ by $1\frac{1}{2}$ by 8 ,,	$\frac{3}{16}$ by 1 by $8\frac{1}{2}$,,	12/6	2/6

The Victor Tool Holder.



1738A

This is a Tool Holder which has been designed principally for use on engine lathes, but can also be used on other machine tools. The illustrations show pretty clearly the design of the Holder, the principal feature being the extra piece at right angles to the shank. The object of this is to obtain greater rigidity and less "spring" by its coming into direct contact with, and bedding down on, the vertical portion of the slide-rest. When the cutter is long enough to project beyond the angle-piece, the same rigidity can be obtained by the use of the set-screw shown at back of cutter.

The cutters are inserted in a hole at each end of the Tool Holder, and held in position by a set-screw, one end being used for turning, screw-cutting, etc., and the other for boring, internal screw-cutting, etc.

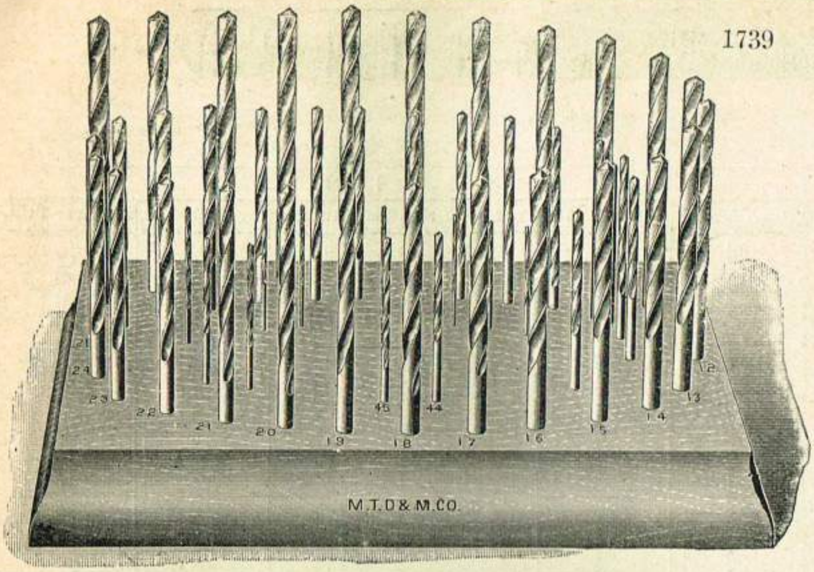
DIMENSIONS AND PRICES.

Sizes	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$in. sq.
Tool Holders	6/-	7/-	8/-	9/-	10/-	12/6	14/-	15/6	21/- each.
Extra Cutters	4/-	4/-	4/-	5/-	5/6	6/-	6/6	7/6	10/6 per doz.

Prices of Tool Holders include Set of Six Cutters and Case-hardened Steel Spanner.

Morse Patent Increase Twist Drills.

Sets of Drills. Mounted.



1739

	£	s.	d.
No. 5.—Set of Straight Shank Drills, $\frac{1}{16}$ to $\frac{1}{2}$in. by 64ths ...	1	1	0
No. 6.—Set of Straight Shank Drills, List No. 105, $\frac{1}{16}$ to $\frac{1}{2}$in. by 32nds	0	11	6
No. 7.—Set of Straight Shank Drills, No. 60, to $\frac{3}{8}$in. by 16ths ...	1	1	0
No. 8.—Set of Steel Wire Drills, Nos. 1 to 60 ...	0	17	0
No. 9.—Half Set Wire Drills, alternate Nos. 1 to 59...	0	9	0
No. 10.—Jewellers' Set, 36 Drills, No 30 ($\frac{1}{8}$in.) to No. 65 Wire Gauge, mounted in Mahogany Case, with Cap ...	0	9	0

Half-Inch Parallel Shank Drills.

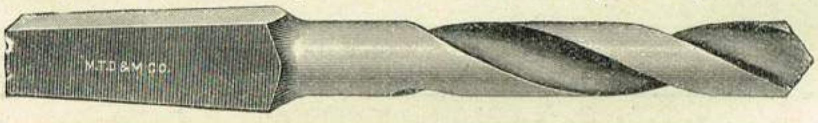
SHANKS, $\frac{1}{2}$IN. DIAMETER BY $2\frac{1}{2}$IN. LONG.

1740

Diameter.	PRICE.	Diameter.	PRICE.	Diameter.	PRICE.	Diameter.	PRICE.	Diameter.	PRICE.	Diameter.	PRICE.	Diameter.	PRICE.
in.	each.	in.	each.	in.	each.	in.	each.	in.	each.	in.	each.	in.	each.
$\frac{1}{8}$	1/-	$\frac{7}{32}$	1/2	$\frac{5}{16}$	1/6	$\frac{13}{32}$	1/10	$\frac{1}{2}$	2/1	$\frac{19}{32}$	2/9	$\frac{11}{16}$	3/4
$\frac{5}{32}$	1/-	$\frac{1}{4}$	1/3	$\frac{11}{32}$	1/7	$\frac{7}{16}$	1/11	$\frac{17}{32}$	2/4	$\frac{5}{8}$	2/11	$\frac{23}{32}$	3/7
$\frac{3}{16}$	1/1	$\frac{9}{32}$	1/5	$\frac{3}{8}$	1/8	$\frac{15}{32}$	2/-	$\frac{9}{16}$	2/6	$\frac{21}{32}$	3/2	$\frac{3}{4}$	4/-

Taper Square Shank Drills, No. 109E.

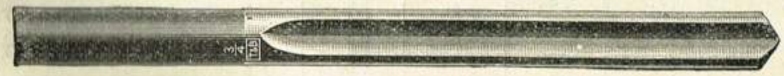
WITH SHANKS $\frac{5}{8}$IN. BY $\frac{3}{8}$IN. AND $1\frac{1}{2}$IN. LONG, OR SHANKS $\frac{3}{4}$IN. BY $\frac{1}{2}$IN. AND $1\frac{3}{4}$IN. LONG.



1741

Diameter.	Length.	PRICE.	Diameter.	Length	PRICE.	Diameter.	Length.	PRICE.	Diameter.	Length.	PRICE.	Diameter.	Length.	PRICE.
in.	in.	each.	in.	in.	each.	in.	in.	each.	in.	in.	each.	in.	in.	each.
$\frac{1}{4}$	5	2/8	$\frac{7}{16}$	$6\frac{1}{4}$	3/4	$\frac{3}{4}$	$6\frac{1}{2}$	4/1	$\frac{15}{16}$	8	6/-	$1\frac{3}{16}$	9	8/9
$\frac{9}{32}$	5	2/9	$\frac{15}{32}$	$6\frac{1}{4}$	3/5	$\frac{25}{32}$	$6\frac{3}{4}$	4/4	$\frac{31}{32}$	$8\frac{1}{4}$	6/3	$1\frac{1}{4}$	9	9/6
$\frac{5}{16}$	5	2/11	$\frac{1}{2}$	$6\frac{1}{2}$	3/5	$\frac{13}{16}$	7	4/7	1	$8\frac{1}{2}$	6/8	$1\frac{5}{16}$	9	10/2
$\frac{11}{32}$	5	3/-	$\frac{9}{16}$	$6\frac{1}{2}$	3/7	$\frac{27}{32}$	$7\frac{1}{4}$	5/-	$1\frac{1}{32}$	$8\frac{3}{4}$	7/-	$1\frac{3}{8}$	9	11/-
$\frac{3}{8}$	6	3/2	$\frac{5}{8}$	$6\frac{1}{2}$	3/8	$\frac{7}{8}$	$7\frac{1}{2}$	5/5	$1\frac{1}{16}$	9	7/6	$1\frac{7}{16}$	9	11/9
$\frac{13}{32}$	$6\frac{1}{4}$	3/4	$\frac{11}{16}$	$6\frac{1}{2}$	3/10	$\frac{29}{32}$	$7\frac{3}{4}$	5/9	$1\frac{1}{8}$	9	8/-	$1\frac{1}{2}$	9	12/6

Straight Fluted Drills with Straight Shanks.



1742

Diam.	Length.	PRICE.	Diam.	Length.	PRICE.	Diam.	Length.	PRICE.	Diam.	Length.	PRICE.	Diam.	Length.	PRICE.	Diam.	Length.	PRICE.
in.	in.	each.	in.	in.	each.	in.	in.	each.	in.	in.	each.	in.	in.	each.	in.	in.	each.
$\frac{1}{16}$	$2\frac{1}{2}$	$2\frac{1}{2}$d.	$\frac{9}{64}$	$3\frac{1}{8}$	4d.	$\frac{7}{32}$	$3\frac{3}{4}$	6d.	$\frac{19}{64}$	$4\frac{3}{8}$	9d.	$\frac{3}{8}$	5	1/-	$\frac{29}{64}$	$5\frac{5}{8}$	1/3
$\frac{5}{64}$	$2\frac{5}{8}$	3d.	$\frac{5}{32}$	$3\frac{1}{4}$	4d.	$\frac{15}{64}$	$3\frac{7}{8}$	7d.	$\frac{5}{16}$	$4\frac{1}{2}$	9d.	$\frac{25}{64}$	$5\frac{1}{8}$	1/-	$\frac{15}{32}$	$5\frac{3}{4}$	1/4
$\frac{3}{32}$	$2\frac{3}{4}$	3d.	$\frac{11}{64}$	$3\frac{3}{8}$	$4\frac{1}{2}$d.	$\frac{1}{4}$	4	7d.	$\frac{21}{64}$	$4\frac{5}{8}$	10d.	$\frac{13}{32}$	$5\frac{1}{4}$	1/1	$\frac{31}{64}$	$5\frac{7}{8}$	1/5
$\frac{7}{64}$	$2\frac{7}{8}$	$3\frac{1}{2}$d.	$\frac{3}{16}$	$3\frac{1}{2}$	5d.	$\frac{17}{64}$	$4\frac{1}{8}$	8d.	$\frac{11}{32}$	$4\frac{3}{4}$	10d.	$\frac{27}{64}$	$5\frac{3}{8}$	1/2	$\frac{1}{2}$	6	1/6
$\frac{1}{8}$	3	$3\frac{1}{2}$d.	$\frac{13}{64}$	$3\frac{5}{8}$	6d.	$\frac{9}{32}$	$4\frac{1}{4}$	9d.	$\frac{23}{64}$	$4\frac{7}{8}$	11d.	$\frac{7}{16}$	$5\frac{1}{2}$	1/3	—	—	—

Patent Straight-Lip Increase Twist Drills.

1743

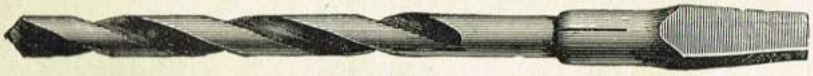
Straight-Shank Drills.

Sizes under $\frac{1}{2}$ inch.			Sizes over $\frac{1}{2}$ inch.					
Diam. Inches.	Length Inches.	Price per Drill.	Diam. Inches.	Length Inches.	Price per Drill.	Diam. Inches.	Length Inches.	Price per Drill.
$\frac{1}{16}$	$2\frac{1}{2}$	$2\frac{1}{2}$d.	$\frac{33}{64}$	8	2/2	$\frac{57}{64}$	$10\frac{1}{2}$	5/6
$\frac{5}{64}$	$2\frac{5}{8}$	3d.	$\frac{17}{32}$	8	2/2	$\frac{29}{32}$	$10\frac{1}{2}$	5/6
$\frac{3}{32}$	$2\frac{3}{4}$	3d.	$\frac{35}{64}$	$8\frac{1}{4}$	2/6	$\frac{59}{64}$	$10\frac{3}{4}$	5/9
$\frac{7}{64}$	$2\frac{7}{8}$	$3\frac{1}{2}$d.	$\frac{9}{16}$	$8\frac{1}{4}$	2/6	$\frac{15}{16}$	$10\frac{3}{4}$	5/9
$\frac{1}{8}$	3	$3\frac{1}{2}$d.	$\frac{37}{64}$	$8\frac{1}{2}$	2/9	$\frac{61}{64}$	$10\frac{3}{4}$	6/1
$\frac{9}{64}$	$3\frac{1}{8}$	4d.	$\frac{19}{32}$	$8\frac{1}{2}$	2/9	$\frac{31}{32}$	$10\frac{3}{4}$	6/1
$\frac{5}{32}$	$3\frac{1}{4}$	4d.	$\frac{39}{64}$	$8\frac{3}{4}$	3/-	$\frac{63}{64}$	11	6/3
$\frac{11}{64}$	$3\frac{3}{8}$	$4\frac{1}{2}$d.	$\frac{5}{8}$	$8\frac{3}{4}$	3/-	1	11	6/3
$\frac{3}{16}$	$3\frac{1}{2}$	5d.	$\frac{41}{64}$	9	3/2	$1\frac{1}{16}$	$11\frac{1}{4}$	7/-
$\frac{13}{64}$	$3\frac{5}{8}$	$5\frac{1}{2}$d.	$\frac{21}{32}$	9	3/2	$1\frac{1}{8}$	$11\frac{3}{4}$	8/-
$\frac{7}{32}$	$3\frac{3}{4}$	6d.	$\frac{43}{64}$	$9\frac{1}{4}$	3/4	$1\frac{3}{16}$	12	8/9
$\frac{15}{64}$	$3\frac{7}{8}$	$6\frac{1}{2}$d.	$\frac{11}{16}$	$9\frac{1}{4}$	3/4	$1\frac{1}{4}$	$12\frac{1}{2}$	9/6
$\frac{1}{4}$	4	7d.	$\frac{45}{64}$	$9\frac{1}{2}$	3/6	$1\frac{5}{16}$	$14\frac{1}{4}$	10/-
$\frac{17}{64}$	$4\frac{1}{8}$	$7\frac{1}{2}$d.	$\frac{23}{32}$	$9\frac{1}{2}$	3/6	$1\frac{3}{8}$	$14\frac{1}{2}$	10/10
$\frac{9}{32}$	$4\frac{1}{4}$	8d.	$\frac{47}{64}$	$9\frac{3}{4}$	3/10	$1\frac{7}{16}$	$14\frac{3}{4}$	11/8
$\frac{19}{64}$	$4\frac{3}{8}$	9d.	$\frac{3}{4}$	$9\frac{3}{4}$	3/10	$1\frac{1}{2}$	15	14/-
$\frac{5}{16}$	$4\frac{1}{2}$	9d.	$\frac{49}{64}$	10	4/2	$1\frac{9}{16}$	$15\frac{1}{4}$	17/3
$\frac{21}{64}$	$4\frac{5}{8}$	10d.	$\frac{25}{32}$	10	4/2	$1\frac{5}{8}$	$15\frac{1}{2}$	18/9
$\frac{11}{32}$	$4\frac{3}{4}$	10d	$\frac{51}{64}$	10	4/6	$1\frac{11}{16}$	$15\frac{3}{4}$	20/6
$\frac{23}{64}$	$4\frac{7}{8}$	11d.	$\frac{13}{16}$	10	4/6	$1\frac{3}{4}$	16	22/-
$\frac{3}{8}$	5	1/-	$\frac{53}{64}$	$10\frac{1}{2}$	4/10	$1\frac{13}{16}$	$16\frac{1}{4}$	23/-
$\frac{25}{64}$	$5\frac{1}{8}$	1/-	$\frac{27}{32}$	$10\frac{1}{2}$	4/10	$1\frac{7}{8}$	$16\frac{1}{2}$	24/-
$\frac{13}{32}$	$5\frac{1}{4}$	1/1	$\frac{55}{64}$	$10\frac{1}{2}$	5/2	$1\frac{15}{16}$	$16\frac{1}{2}$	25/-
$\frac{27}{64}$	$5\frac{3}{8}$	1/2	$\frac{7}{8}$	$10\frac{1}{2}$	5/2	2	$16\frac{1}{2}$	26/-
$\frac{7}{16}$	$5\frac{1}{2}$	1/3						
$\frac{29}{64}$	$5\frac{5}{8}$	1/3						
$\frac{15}{32}$	$5\frac{3}{4}$	1/4						
$\frac{31}{64}$	$5\frac{7}{8}$	1/5						
$\frac{1}{2}$	6	1/6						

For Various Twist Drill Gauges, see Page 162.

Bit Stock Drills, No. 109.

For Metal or Wood.


1744

Diameter, Inches.	Price, each.	Whole Length, Inches.	Length from Shank to Point, Inches.	Diameter, Inches.	Price, each.	Whole Length, Inches.	Length from Shank to Point, Inches.
$\frac{2}{32}$	3d.	$3\frac{5}{16}$	$1\frac{1}{2}$	$\frac{11}{32}$	$1/1\frac{1}{2}$	$5\frac{7}{8}$	$4\frac{5}{8}$
$\frac{3}{32}$	$3\frac{1}{2}$d.	$3\frac{5}{8}$	$1\frac{7}{8}$	$\frac{12}{32}$	1/3	$5\frac{7}{8}$	$4\frac{5}{8}$
$\frac{4}{32}$	4d.	$4\frac{1}{16}$	$2\frac{1}{4}$	$\frac{13}{32}$	1/4	$5\frac{7}{8}$	$4\frac{5}{8}$
$\frac{5}{32}$	5d.	$4\frac{3}{8}$	$2\frac{1}{2}$	$\frac{14}{32}$	1/6	$6\frac{1}{4}$	5
$\frac{6}{32}$	6d.	$4\frac{3}{4}$	$2\frac{7}{8}$	$\frac{15}{32}$	1/8	$6\frac{5}{8}$	$5\frac{3}{8}$
$\frac{7}{32}$	7d.	$5\frac{1}{4}$	$3\frac{1}{8}$	$\frac{16}{32}$	1/9	$6\frac{3}{4}$	$5\frac{1}{2}$
$\frac{8}{32}$	9d.	$5\frac{3}{16}$	$3\frac{15}{16}$	$\frac{9}{16}$	2/-	$7\frac{1}{2}$	$5\frac{5}{8}$
$\frac{9}{32}$	$10\frac{1}{2}$d.	$5\frac{3}{8}$	$4\frac{1}{4}$	$\frac{5}{8}$	2/6	$7\frac{1}{2}$	$5\frac{5}{8}$
$\frac{10}{32}$	1/-	$5\frac{1}{2}$	$4\frac{1}{4}$	$\frac{3}{4}$	3/3	$7\frac{1}{2}$	$5\frac{5}{8}$

Our Bit Stock Drills will fit any brace in the market, and will drill steel, iron, or other metals, as well as wood. They are not injured by contact with screws or nails, and will bore straight any kind of wood without splitting it.

Wire Drills.

1744A

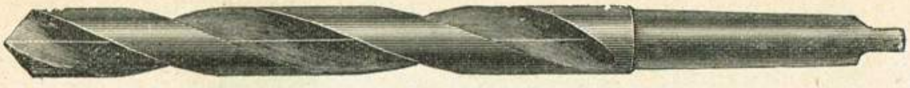
Nos. by Gauge.	Length.	Price, each.
	In. In.	
1 to 5	4 to $3\frac{13}{16}$	5d.
6 ,, 10	$3\frac{13}{16}$,, $3\frac{5}{8}$	5d.
11 ,, 15	$3\frac{9}{16}$,, $3\frac{7}{16}$	$4\frac{1}{2}$d.
16 ,, 20	$3\frac{3}{8}$,, $3\frac{3}{16}$	4d.
21 ,, 25	$3\frac{3}{16}$,, 3	$3\frac{1}{2}$d.
26 ,, 30	$2\frac{15}{16}$,, $2\frac{13}{16}$	$3\frac{1}{2}$d.
31 ,, 35	$2\frac{3}{4}$,, $2\frac{9}{16}$	3d.
36 ,, 40	$2\frac{9}{16}$,, $2\frac{3}{8}$	3d.
41 ,, 45	$2\frac{5}{16}$,, $2\frac{3}{16}$	$2\frac{1}{2}$d.
46 ,, 60	$2\frac{1}{8}$,, $1\frac{9}{16}$	$2\frac{1}{2}$d.
61 ,, 70	$1\frac{1}{2}$,, $1\frac{5}{16}$	2d.
71 ,, 80	$1\frac{5}{16}$,, $\frac{3}{4}$	$2\frac{1}{2}$d.

For Size in Decimals of 1in., see Page 162.

Patent Straight-Lip Increase Twist Drills.

With Patent Grinding Line on Sizes above $\frac{3}{8}$in.

1745



DRILL WITH TAPER SHANK TO FIT SOCKETS.

TAPER SHANKS. No. 1 Socket .. 4/-

Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{1}{8}$	$5\frac{1}{4}$	1/-
$\frac{5}{32}$	$5\frac{1}{2}$	1/-
$\frac{3}{16}$	6	1/1
$\frac{7}{32}$	$6\frac{1}{8}$	1/2
$\frac{1}{4}$	$6\frac{1}{8}$	1/3
$\frac{9}{32}$	$6\frac{1}{4}$	1/4
$\frac{5}{16}$	$6\frac{3}{8}$	1/6
$\frac{11}{32}$	$6\frac{1}{2}$	1/7
$\frac{3}{8}$	$6\frac{3}{4}$	1/8
$\frac{13}{32}$	7	1/9
$\frac{7}{16}$	$7\frac{1}{4}$	1/11
$\frac{15}{32}$	$7\frac{1}{2}$	2/-
$\frac{1}{2}$	$7\frac{3}{4}$	2/1
$\frac{17}{32}$	8	2/2
$\frac{9}{16}$	$8\frac{1}{4}$	2/6
$\frac{19}{32}$	$8\frac{1}{2}$	2/9

No. 2 Socket .. 5/-

Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{5}{8}$	$8\frac{3}{4}$	3/-
$\frac{21}{32}$	9	3/2
$\frac{11}{16}$	$9\frac{1}{4}$	3/4
$\frac{23}{32}$	$9\frac{1}{2}$	3/6
$\frac{3}{4}$	$9\frac{3}{4}$	3/10
$\frac{25}{32}$	$9\frac{7}{8}$	4/2
$\frac{13}{16}$	10	4/6
$\frac{27}{32}$	$10\frac{1}{4}$	4/10
$\frac{7}{8}$	$10\frac{1}{2}$	5/2
$\frac{29}{32}$	$10\frac{5}{8}$	5/6

TAPER SHANKS. No. 3 Socket .. 6/-

Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{15}{16}$	$10\frac{3}{4}$	5/9
$\frac{31}{32}$	$10\frac{7}{8}$	6/1
1	11	6/3
$1\frac{1}{32}$	$11\frac{1}{8}$	6/9
$1\frac{1}{16}$	$11\frac{1}{4}$	7/-
$1\frac{3}{32}$	$11\frac{1}{2}$	7/8
$1\frac{1}{8}$	$11\frac{3}{4}$	8/-
$1\frac{5}{32}$	$11\frac{7}{8}$	8/6
$1\frac{3}{16}$	12	8/9
$1\frac{7}{32}$	$12\frac{1}{8}$	9/3
$1\frac{1}{4}$	$12\frac{1}{2}$	9/6

No. 4 Socket .. 7/6

Diam. Inch.	Length. Inches.	PRICE per Drill.
$1\frac{9}{32}$	$14\frac{1}{8}$	9/9
$1\frac{5}{16}$	$14\frac{1}{4}$	10/-
$1\frac{11}{32}$	$14\frac{3}{8}$	10/8
$1\frac{3}{8}$	$14\frac{1}{2}$	10/10
$1\frac{13}{32}$	$14\frac{5}{8}$	11/6
$1\frac{7}{16}$	$14\frac{3}{4}$	11/8
$1\frac{15}{32}$	$14\frac{7}{8}$	13/6
$1\frac{1}{2}$	15	14/-
$1\frac{17}{32}$	$15\frac{1}{8}$	16/6
$1\frac{9}{16}$	$15\frac{1}{4}$	17/3
$1\frac{19}{32}$	$15\frac{3}{8}$	18/3

TAPER SHANKS. No. 4 Socket .. 7/6

Diam. Inch.	Length. Inches.	PRICE per Drill.
$1\frac{5}{8}$	$15\frac{1}{2}$	18/9
$1\frac{21}{32}$	$15\frac{5}{8}$	20/-
$1\frac{11}{16}$	$15\frac{3}{4}$	20/6
$1\frac{23}{32}$	$15\frac{7}{8}$	20/9
$1\frac{3}{4}$	16	22/-
$1\frac{25}{32}$	$16\frac{1}{8}$	22/-
$1\frac{13}{16}$	$16\frac{1}{4}$	23/-
$1\frac{27}{32}$	$16\frac{3}{8}$	23/6
$1\frac{7}{8}$	$16\frac{1}{2}$	24/-
$1\frac{29}{32}$	$16\frac{1}{2}$	24/6
$1\frac{15}{16}$	$16\frac{1}{2}$	25/-
$1\frac{31}{32}$	$16\frac{1}{2}$	25/6
2	$16\frac{1}{2}$	26/-

No. 1 Socket .. 4/-

Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{15}{64}$	$6\frac{1}{8}$	1/3
$\frac{17}{64}$	$6\frac{1}{4}$	1/3
$\frac{19}{64}$	$6\frac{3}{8}$	1/4
$\frac{21}{64}$	$6\frac{1}{2}$	1/6
$\frac{23}{64}$	$6\frac{3}{4}$	1/7
$\frac{25}{64}$	7	1/8
$\frac{27}{64}$	$7\frac{1}{4}$	1/10
$\frac{29}{64}$	$7\frac{1}{2}$	2/-
$\frac{31}{64}$	$7\frac{3}{4}$	2/1
$\frac{33}{64}$	8	2/3

TAPER SHANKS. No. 1 Socket .. 4/-

Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{35}{64}$	$8\frac{1}{4}$	2/5
$\frac{37}{64}$	$8\frac{1}{2}$	2/8

No. 2 Socket .. 5/-

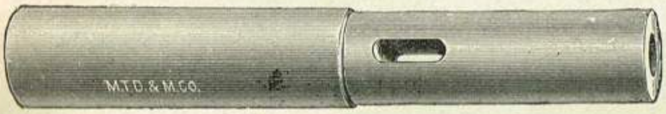
Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{39}{64}$	$8\frac{3}{4}$	2/11
$\frac{41}{64}$	9	3/2
$\frac{43}{64}$	$9\frac{1}{4}$	3/4
$\frac{45}{64}$	$9\frac{1}{2}$	3/8
$\frac{47}{64}$	$9\frac{3}{4}$	4/-
$\frac{49}{64}$	$9\frac{7}{8}$	4/2
$\frac{51}{64}$	10	4/6
$\frac{53}{64}$	$10\frac{1}{4}$	4/10
$\frac{55}{64}$	$10\frac{1}{2}$	5/2
$\frac{57}{64}$	$10\frac{5}{8}$	5/6

No. 3 Socket ... 6/-

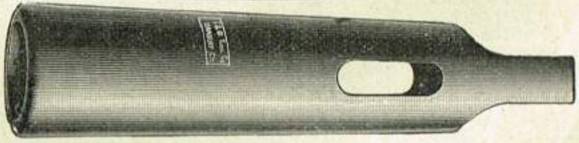
Diam. Inch.	Length. Inches.	PRICE per Drill.
$\frac{59}{64}$	$10\frac{3}{4}$	5/9
$\frac{61}{64}$	$10\frac{7}{8}$	6/-
$\frac{63}{64}$	11	6/3
$1\frac{1}{64}$	$11\frac{1}{8}$	6/9
$1\frac{3}{64}$	$11\frac{1}{4}$	7/0
$1\frac{5}{64}$	$11\frac{1}{2}$	7/8
$1\frac{7}{64}$	$11\frac{3}{4}$	8/-
$1\frac{9}{64}$	$11\frac{7}{8}$	8/6
$1\frac{11}{64}$	12	8/9
$1\frac{13}{64}$	$12\frac{1}{8}$	9/3
$1\frac{15}{64}$	$12\frac{1}{2}$	9/6

Drills of any size or length, with straight or taper shank, made to order in about six weeks. Left-hand Drills, increase price about 25 per cent. For very exact work a gauge, plainly marked, should accompany the order. The Patent Grinding Line is only applied to drills $\frac{3}{8}$in. and larger.

Sockets and Sleeves for Taper Shank Drills.



SOCKET.



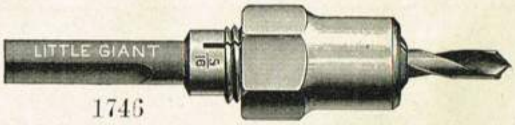
SLEEVE.

SIZE	SOCKETS.	PRICE	SIZE	SLEEVES	PRICE
No. 1	Holding Drills $\frac{1}{8}$in. to $\frac{19}{32}$in.	4/-	No. 1	Fitting No. 2 or 3 Socket	4/3
" 2	" " $\frac{5}{8}$in. " $\frac{29}{32}$in.	5/-	" 2	" " 3 "	5/6
" 3	" " $\frac{15}{16}$in. " $1\frac{1}{4}$in.	6/-	" 3	" " 4 "	6/3
" 4	" " $1\frac{9}{32}$in. " 2in.	7/6			

"Little Giant" Drill Holders.

For Holding Straight Shank Drills.

PRICES AND SIZES.



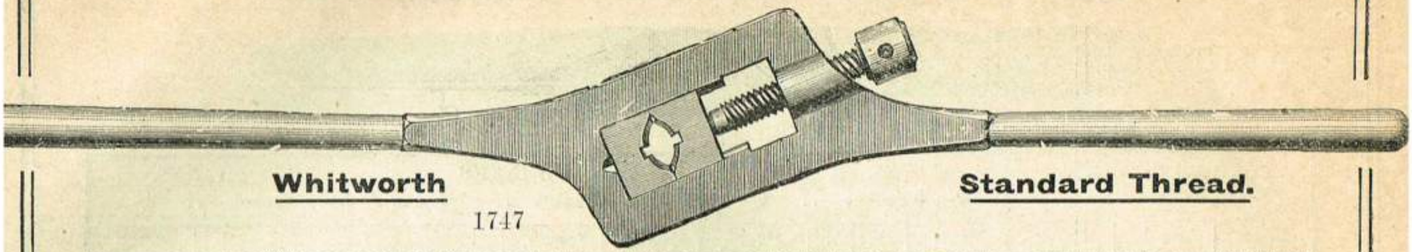
1746

WITH SHANKS $\frac{1}{2}$in. DIAMETER.

For holding drills $\frac{1}{8}$, $\frac{5}{32}$, $\frac{3}{16}$, $\frac{7}{32}$, $\frac{1}{4}$, $\frac{9}{32}$, $\frac{5}{16}$, $\frac{11}{32}$, $\frac{3}{8}$, $\frac{13}{32}$, $\frac{7}{16}$, $\frac{15}{32}$ins., 3/- each.
This will be found not only USEFUL, but a MONEY-SAVING tool.
Useful, because it is always ready with drill set for use.
Will save you money, because you can buy straight shank drills for less than half the price of $\frac{1}{2}$in. shank drills;
Because you can take so short a bite on drill, that, should it break, you would yet have a part of drill saved;
Because you can use up what broken drills you may have on hand.

It Requires a Holder for each size Drill.

Best Stocks and Dies for Engineers' Use.



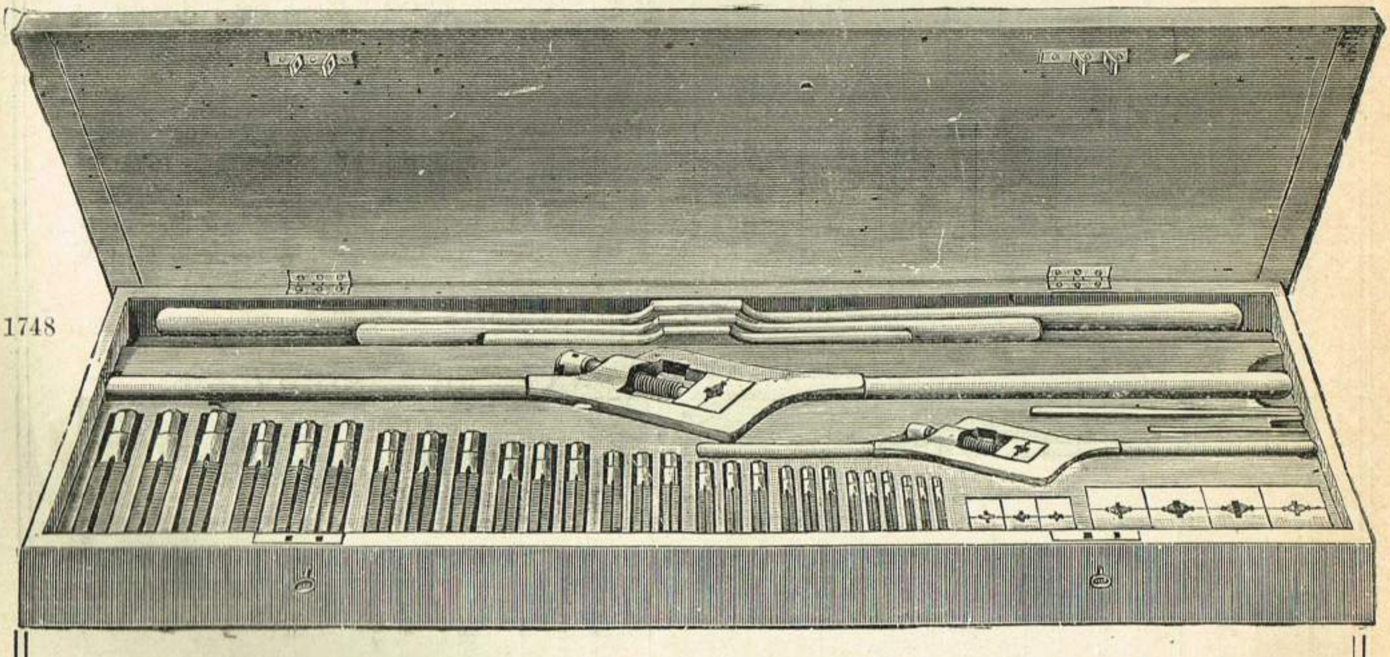
Whitworth Standard Thread.

1747

TO SCREW.	With Taper and Plug Tap to each side.	With Taper 2nd, Plug and Master Tap to each size.	TO SCREW.	With Taper and Plug Tap to each side.	With Taper 2nd, Plug and Master Tap to each size.	TO SCREW.	With Taper and Plug Tap to each side.	With Taper 2nd, Plug and Master Tap to each size.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.
¼ 5⁄16 ⅜	0 17 0	1 5 0	⅜ ½ ⅝ ¾	1 12 6	2 11 6	¾ ⅞ 1 1¼...	2 11 6	4 6 0
3⁄16 ¼ 5⁄16 ⅜	1 0 6	1 10 6	⅜ 7⁄16 ½ ⅝ ¾	1 18 0	3 0 0	¾ ⅞ 1 1⅛ 1¼	3 2 6	5 7 0
⅛ 3⁄16 ¼ 5⁄16 ⅜	1 4 0	1 16 6	½ ⅝ ¾ ⅞	1 17 9	3 1 0	1 1⅛ 1¼ 1⅜......	3 7 6	5 10 6
¼ 5⁄16 ⅜ 7⁄16	1 5 0	1 17 0	⅝ ¾ 1	1 18 9	2 18 0	1 1¼ 1½	2 19 6	4 13 6
¼ ⅜ ½	1 0 0	1 9 0	¾ ⅞ 1	1 18 9	3 0 0	1 1⅛ 1¼ 1½	3 11 6	5 16 6
⅜ 7⁄16 ½	1 0 0	1 10 6	½ ⅝ ¾ 1	2 5 6	3 9 0	1 1⅛ 1¼ 1⅜ 1½ ..	4 9 6	7 7 0
¼ 5⁄16 ⅜ ½........	1 5 0	1 17 0	⅝ ¾ ⅞ 1	2 5 6	3 13 0	1¼ 1½ 1¾	4 8 0	7 15 0
¼ 5⁄16 ⅜ 7⁄16 ½	1 11 0	2 6 6	½ ⅝ ¾ ⅞ 1	2 12 6	4 3 0	1 1¼ 1½ 1¾	5 5 0	8 2 0
⅜ ½ ⅝	1 2 0	1 15 6	¾ ⅞ 1 1⅛	2 11 6	4 5 0	1¼ 1½ 2	5 8 0	8 3 6
¼ ⅜ ½ ⅝	1 6 6	2 1 0	¾ 1 1¼	2 3 6	3 9 6	1½ 1¾ 2	5 15 0	9 0 0
⅜ 7⁄16 ½ ⅝........	1 7 0	2 2 6	⅞ 1 1¼	2 3 6	3 11 0	1¼ 1½ 1¾ 2	6 17 6	10 14 0
¼ 5⁄16 ⅜ 7⁄16 ½ ⅝ ..	1 18 0	2 16 6	1 1⅛ 1¼	2 4 6	3 14 6	2 2¼ 2½	8 2 0	13 16 0
½ ⅝ ¾	1 7 0	2 2 6						

Stocks and Dies in Cases.

1748

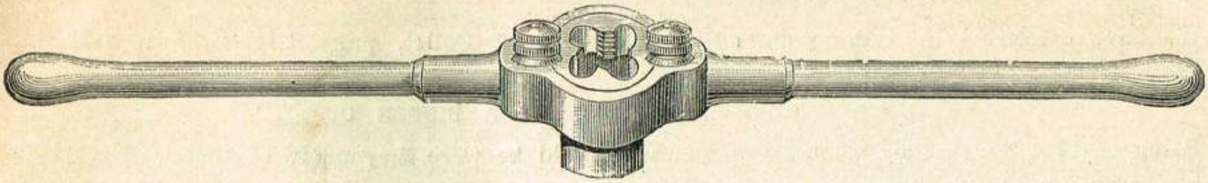


Best Warranted English-made Stocks and Dies, in cases, with separate divisions for each article, made in the best quality only and fully warranted.

RANGE OF SIZES		With Taper and Plug Tap to each size, and Tap Wrenches.	With Taper 2nd, Plug and Master Tap to each size, and Tap Wrenches.	
To Screw.		Deal Case.	Deal Case.	Oak Case.
		£ s. d.	£ s. d.	£ s. d.
No. 1 set, ⅜ ½ ⅝—¾ ⅞ 1	fitted into 1 case	4 10 6	6 5 0	6 15 0
,, 2 ,, ¼ ⅜ ½—⅝ ¾ ⅞ 1	,, 1 ,,	4 14 6	6 12 6	7 0 0
,, 3 ,, ¼ 5⁄16 ⅜ 7⁄16 ½—⅝ ¾ ⅞ 1	,, 1 ,,	5 10 0	7 14 6	8 1 0
,, 4 ,, ⅜ ½ ⅝ ¾—⅞ 1 1⅛ 1¼	,, 1 ,,	6 10 6	9 7 6	9 18 6
,, 5 ,, ¼ ⅜ ½ ⅝—¾ ⅞ 1 1⅛ 1¼	,, 1 ,,	6 14 6	9 14 0	10 5 0
,, 6 ,, ¼ 5⁄16 ⅜ 7⁄16—½ ⅝ ¾—⅞ 1 1⅛ 1¼	,, 1 ,,	7 15 0	11 0 0	11 11 6
,, 7 ,, ⅜ ½ ⅝—¾ ⅞ 1—1⅛ 1¼ 1⅜ 1½	,, 1 ,,	9 17 6	14 10 6	15 0 0
,, 8 ,, ¼ ⅜ ½—⅝ ¾ ⅞ 1—1⅛ 1¼ 1⅜ 1½	,, 1 ,,	10 0 0	14 12 6	15 2 6
,, 9 ,, ¼ 5⁄16 ⅜ 7⁄16 ½—⅝ ¾ ⅞ 1—1⅛ 1¼ 1⅜ 1½	,, 1 ,,	10 16 6	15 15 0	16 7 6
,, 10 ,, ¼ ⅜ ½ ⅝—¾ ⅞ 1 1⅛ 1¼—1⅜ 1½ 1¾ 2	,, 2 ,,	16 5 0	23 10 6	24 17 6
,, 11 ,, ¼ ⅜ ½—⅝ ¾ ⅞ 1—1⅛ 1¼ 1⅜ 1½—1⅝ 1¾ 1⅞ 2 ..	,, 2 ,,	20 0 0	29 10 0	31 0 0
,, 12 ,, ¼ 5⁄16 ⅜ 7⁄16 ½—⅝ ¾ ⅞ 1—1⅛ 1¼ 1⅜ 1½—1⅝ 1¾ 1⅞ 2	,, 2 ,,	21 0 0	31 0 0	32 10 0

Solid Die Stock.

Made to Screw up to 3in. at once going over.



1749 Best Quality English-made Solid Die Stocks, fitted with Guides and Taper and Plug Taps to each size. A perfect screw can be cut on Gas Tube by this Tool at once going down, thereby effecting a great saving of time and labour.

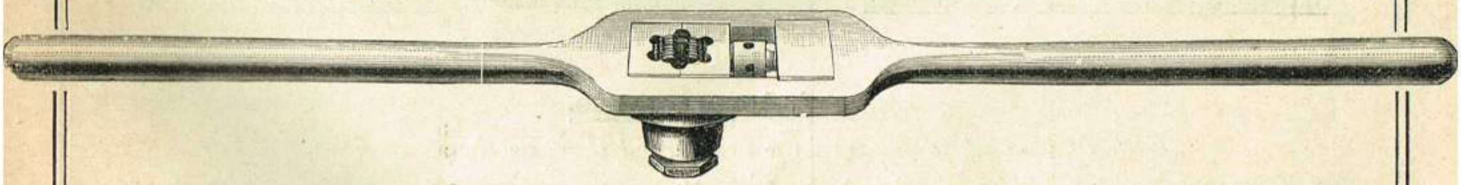
No.	To Cut.	With Taper and Plug Taps.			Without Taps.		
		£	s.	d.	£	s.	d.
1A.	⅛ ¼ ⅜in.	1	2	6	0	16	0
2B.	¼ ⅜ ½in.	1	8	6	1	0	6
3C.	⅜ ½ ¾in.	1	19	0	1	8	6
4C.	¼ ⅜ ½ ¾in.	2	8	0	1	15	6
5D.	½ ¾ 1in.	2	7	6	1	13	6
6D.	¼ ⅜ ½ ¾ 1in.	3	8	0	2	9	0
7E.	¾ 1 1¼in.	3	7	6	2	8	6
8E.	½ ¾ 1 1¼in.	4	0	0	2	18	6
9F.	1 1¼ 1½in.	4	10	0	3	5	6
10F.	¾ 1 1¼ 1½in.	5	8	0	3	18	6
11G.	1¼ 1½ 1¾in.	5	15	6	4	0	0
12G.	1 1¼ 1½ 1¾in.	6	18	0	4	17	6
13G.	1½ 1¾ 2in.	6	12	6	4	4	0
14G.	1 1¼ 1½ 2in.	7	2	6	4	17	6
15G.	1¼ 1½ 1¾ 2in.	7	13	6	4	18	6
16J.	1½ 2 2½in.	10	4	0	6	12	6
17J.	2 2¼ 2½in.	11	0	0	6	14	0
18K.	2½ 3in.	13	0	0	8	8	0
19K.	2 2½ 3in.	15	10	6	9	17	6

Prices of Extra Dies and Guides for above Stocks.

Size of Stocks	A	B	C	D	E	F	G	J	K
Extra Dies	2/9	3/9	5/-	6/-	7/6	10/6	13/-	18/-	22/6
Extra Guides... ...	1/3	1/4	2/-	2/3	2/9	3/6	4/6	6/6	7/6

Adjustable Die Stocks.

For Screwing Iron Gas Tube at once over.



1749A The above Patent Adjustable Taper Die and Guide Stock will be found much superior to the ordinary Solid Die Stock for screwing a full thread at once over. It is capable of being adjusted $\frac{1}{16}$th, thus overcoming the long-experienced difficulty of screwing gas or steam tubing to fit the various sizes of couplings, and allows a good and perfect joint to be made. When the ordinary Solid Die and Guide is used, large pipes have very often to be filed down before the die will cut the thread, while the above will cut with comparative ease.

With Taper and Plug Taps—		£	s.	d.
To Screw	⅜ ¼ ⅛in.	1	7	6
,,	½ ⅜ ¼in.	1	16	6
,,	¾ ½ ⅜in.	2	5	0
,,	1 ¾ ½in.	2	15	0
,,	1 ¾ ½ ⅜in. ...	3	5	6
,,	1¼ 1 ¾in.	3	10	0

With Taper and Plug Taps—		£	s.	d.
To Screw	1½ 1¼ 1in.	4	12	6
,,	2 1½ 1¼in.	6	6	0
,,	2 1½ 1¼ 1in. ...	7	7	0
,,	2½ 2¼ 2in.	20	10	0
,,	3 2½ 2¼in.	27	0	0

"Little Giant" Screw Plates.

1750 These **Screw Plates** are justly celebrated for **durability, convenience,** and **beauty of design.**

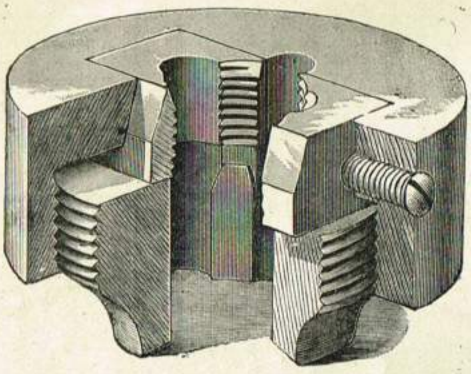
We have succeeded in making an adjustable Die and Collet, practically *solid*, a very important feature in this class of tools. These Dies

MAKE A PERFECT THREAD AT A SINGLE CUT.

Being of **Flat Steel**, they are better than they would be were they made of round. Everybody acknowledges that.

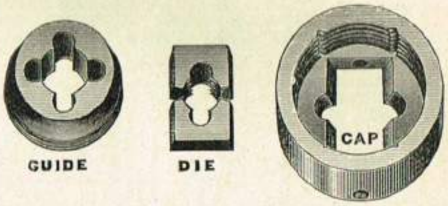
Plenty of adjustment, in fact, much more than is necessary.

Adjustable Die.



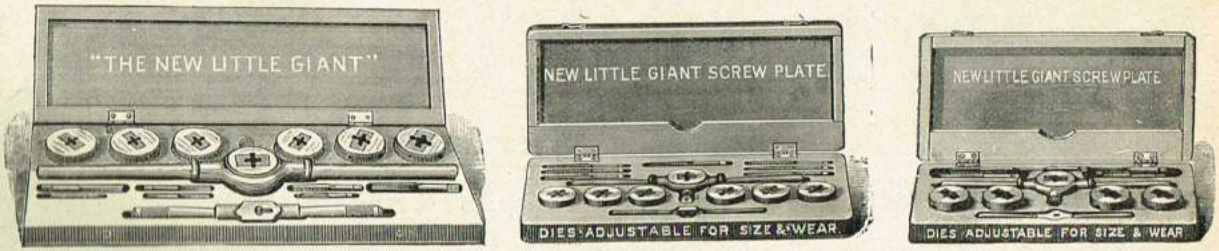
Patented Feb. 3, 1885.

SECTIONAL VIEW OF DIE AND COLLET.



Explanation of the "Little Giant" Die.— The collet or holder is made of two pieces, called a cap and a guide. The cap has a bevel slot into which the bevel of die is fitted. The guide is screwed into the cap, which throws the die into the bevel of the collet, and into line. To adjust, simply turn the screws at end of dies in or out, as the adjustment desired requires.

Our claim for this adjustable die is its solidity; the impossibility of stripping of threads; its perfect adjustment; its simplicity, durability, and strength; doing away with all taper-pointed and cup-headed screws, common in many makes of dies.


"THE NEW LITTLE GIANT"
NEW LITTLE GIANT SCREW PLATE.
DIES ADJUSTABLE FOR SIZE & WEAR.
NEW LITTLE GIANT SCREW PLATE
DIES ADJUSTABLE FOR SIZE & WEAR

1751

List of Assortments.

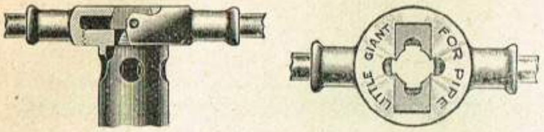
Each Assortment is put up in a neat Wood Case, as shown in Cuts.

No. A1 has Stock and Tap Wrench. Cuts $\frac{1}{8}$, $\frac{5}{32}$, $\frac{3}{16}$, $\frac{7}{32}$, $\frac{1}{4}$in.	£1	3	6
No. A2 has Stock and Tap Wrench. Cuts $\frac{7}{64}$, $\frac{1}{8}$, $\frac{9}{64}$, $\frac{5}{32}$, $\frac{3}{16}$, $\frac{7}{32}$, $\frac{1}{4}$in.	1	9	0
No. 1 has Stock 14$\frac{1}{2}$in. long. Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$in.	2	3	6
No. 2 has Stock 23in. long. Cuts $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$in.	2	10	0
No. 3 has Stock 26in. long. Cuts $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1in.	2	15	0
No. 4 has Stock 26in. long. Cuts $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1in.	3	5	0
No. 8 has Stock 14$\frac{1}{2}$in. long for first four sizes, and 26in. Stock for the larger sizes. Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$in.	3	5	0
No. 9 has Stock 14$\frac{1}{2}$in. long for first four sizes, and 29in. Stock for the larger sizes. Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1in.	5	0	0

Each Assortment has **Adjustable Tap Wrenches** for holding all sizes of taps contained in Assortment.

"Little Giant" Screw-plates, for Pipe.

A Stock, Die, and Guide Complete.



Sectional View of Stock, Die, and Guide, showing Adjustment.

1752 This new departure in Stocks and Dies for Pipe can but recommend itself to all users of this class of tools.

Each Die is furnished with a Stock and Guide, independent of the other sizes, of suitable length and weight. In this way the annoyance of removing dies and adjustment to size is done away with, as every die is in place and true to size, requiring no adjustment except only when the irregularity or variation in the fittings make it necessary.

These Stocks, Dies, and Guides are packed in boxes containing *one* complete set of one size only. *Also* in sets as shown.

The Guides are interchangeable throughout the set, for convenience in cutting nipples.

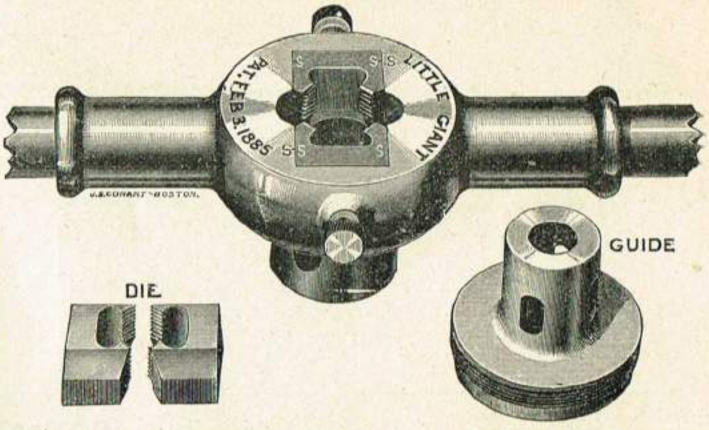
Sure to cut the thread straight. The Dies can be re-sharpened.

Dies are adjustable to overcome variation of fittings or pipe.

Dies and Guides can be changed quickly.

It is light yet strong and durable.

Dies are held by bevel. No screws to break or to get out of order.



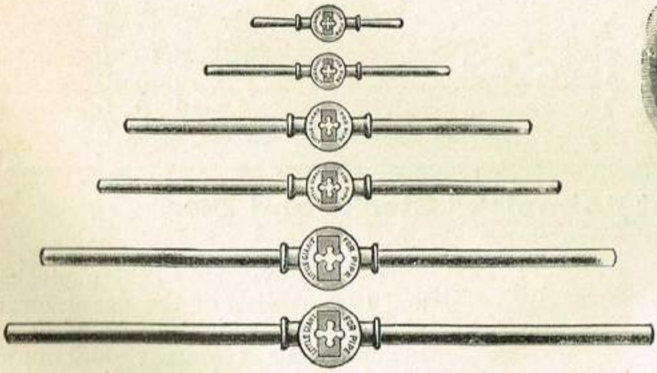
Sectional View showing Parts of Plate.

A Stock, Die, and Guide.—The Stock has a bevel slot; the sides of Dies are also bevel; the bevel of Die is placed in the bevel of Stock, and Guide screwed in, which holds the Die firmly in Stock. The thumb-screws at ends of Dies are used to adjust Dies to size and wear, as well as to overcome irregularities in fittings.

To change from one size to another, simply screw out the Guide, drop out the Die, and replace with size Die and Guide required.

NEW LITTLE GIANT SCREW PLATE
FOR PIPE
DIES ADJUSTABLE FOR SIZE & WEAR

A Solid Die, yet Adjustable. In Polished Cases.



List of Sizes, Lengths, and Prices of Complete Sets.

No. **80,**	for ⅛in. Pipe;	length of Stock, 9in.	**6/6**
,, **81,**	,, ¼in. ,,	,, ,, 13½in.	**7/-**
,, **82,**	,, ⅜in. ,,	,, ,, 23in.	**8/6**
,, **83,**	,, ½in. ,,	,, ,, 26in.	**9/-**
,, **84,**	,, ¾in. ,,	,, ,, 32in.	**11/6**
,, **85,**	,, 1in. ,,	,, ,, 36in.	**12/-**
,, **86,**	,, 1¼in. ,,	,, ,, 41in.	**17/-**
,, **87,**	,, 1½in. ,,	,, ,, 46in.	**22/-**
,, **88,**	,, 2in. ,,	,, ,, 52in.	**27/6**

When ordering, give No. and size.

Prices.

No. **1 Plate,** Cutting ¼, ⅜, ½, ¾, 1in.	**£1**	**6**	**6**
Dies, when sold alone, each size	**0**	**4**	**0**
Guides, when sold alone, each size	**0**	**1**	**6**
No. **2 Plate,** Cutting 1¼, 1½, 2in. ...	**2**	**2**	**6**
Dies, when sold alone	**0**	**9**	**0**
Guides ,, ,, ...	**0**	**2**	**6**

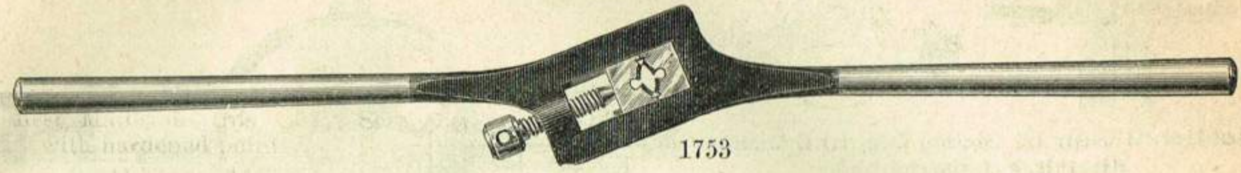
This Plate is packed same as shown above.

⅛in. Die and Guide to suit No. 1 Plate can be supplied for **5/6** extra, and either 1in. or 1¾in. Die and Guide, for No. 2 Plate, at **11/6** each size extra.

Good Quality Stocks and Dies for Engineers' Use.

Whitworth Standard Thread, with Taper and Plug Tap to each Size.

Best Continental Make.



1753

To Screw.		To Screw.	
1/8 3/16 1/4in.	5/6	1/2 5/8 3/4in.	12/-
1/4 5/16 3/8in.	7/-	3/8 1/2 5/8 3/4in.	14/6
1/4 3/8 1/2in.	8/-	5/8 3/4 7/8in.	16/6
3/8 7/16 1/2in.	8/6	3/4 7/8 1in.	20/-
3/8 1/2 5/8in.	9/6	1/2 5/8 3/4 7/8 1in.	26/6
1/4 3/8 1/2 5/8in.	12/-	1 1 1/4 1 1/2in.	40/-

Stocks and Dies in Cases.

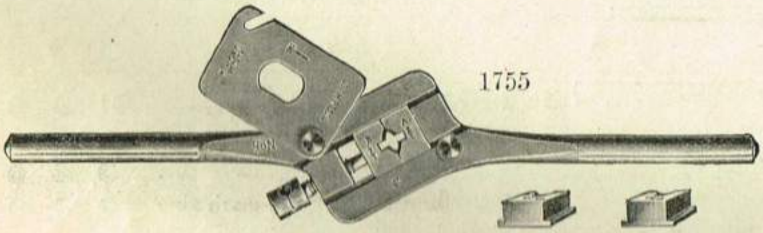
Continental Make.

The following sets are of the best Continental Make, and are fitted in Polished Pine Cases. While not equal in finish to the English-made set, they are of reliable quality and are warranted. These Cases have been supplied for years past to some of the leading firms in the North of England and on the Clyde, and have given universal satisfaction. Complete with Tap Wrenches and Tommies.

1754 In Polished Pine Cases containing sizes as follow :—

	With 1 Taper and 1 Plug Tap to each size. Per Case. £	s.	d.
1/4 3/8 1/2 — 5/8 3/4 7/8 1in.	2	10	0
1/4 5/16 3/8 7/16 1/2 — 5/8 3/4 7/8 1in.	2	15	0
1/4 3/8 1/2 5/8 3/4 — 7/8 1 1 1/8in.	3	0	0
1/4 3/8 1/2 5/8 3/4 — 7/8 1 1 1/8 1 1/4in.	3	10	0
1/4 3/8 1/2 5/8 — 3/4 7/8 1 — 1 1/8 1 1/4 1 3/8in.	5	0	0
1/4 3/8 1/2 — 5/8 3/4 7/8 1 — 1 1/8 1 1/4 1 1/2in.	6	6	0
1/4 3/8 1/2 — 5/8 3/4 7/8 1 — 1 1/8 1 1/4 1 3/8 1 1/2in.	6	10	0
1/4 3/8 1/2 5/8 — 3/4 7/8 1 1 1/8 — 1 1/4 1 1/2 1 3/4in.	8	10	0
1/4 3/8 1/2 5/8 3/4 — 7/8 1 1 1/8 1 1/4 — 1 3/8 1 1/2 1 5/8 1 3/4in.	10	0	0
1/4 3/8 1/2 5/8 3/4 — 7/8 1 1 1/8 1 1/4 — 1 1/2 1 3/4 2in.	10	10	0
1/4 3/8 1/2 — 5/8 3/4 7/8 1 — 1 1/8 1 1/4 1 3/8 1 1/2 — 1 5/8 1 3/4 1 7/8 2in.	14	0	0

Improved Pattern Patent "Simplex" Stocks and Dies.



1755

The improvement in these Stocks and Dies consists of the novel form of the Dies, which allows of their instantaneous removal; and new Dies can always be supplied, with certainty of their accurately fitting the Stock without having to return Stock to works to be fitted.

Cutting Whitworth Standard Threads.

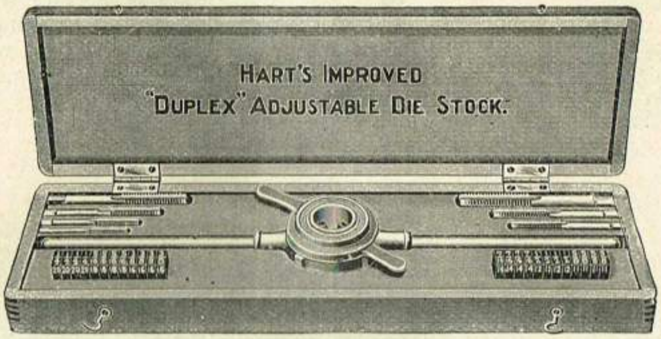
No. 1, Cutting	1/8 3/16 1/4in.	6/6	per set, with Taper and Plug Tap to each size.
No. 2, ,,	1/4 5/16 3/8in.	8/-	,, ,, ,, ,,
No. 3, ,,	3/8 7/16 1/2in.	10/-	,, ,, ,, ,,
No. 4, ,,	3/8 1/2 5/8in.	12/6	,, ,, ,, ,,
No. 5, ,,	1/4 3/8 1/2 5/8in.	14/6	,, ,, ,, ,,
No. 6, ,,	1/2 5/8 3/4in.	14/6	,, ,, ,, ,,

Special Cases of above Stocks and Dies, complete with Tap Wrenches and Tommies.

No. 1, Cutting	1/8 3/16 1/4 5/16 3/8 7/16 1/2in.	25/-
No. 2, ,,	1/4 5/16 3/8 7/16 1/2 5/8 3/4in.	35/-

Hart's Patent Duplex Stocks and Dies.

We are placing on the market what is virtually an entirely new line of Die Stocks for threading bolts and rods, for besides the changing of patterns of all sizes, we have added some new features in the way of improvements, and also adopted new materials to make them both stronger and lighter. Some of the advantages over our former style lie in the ability to thread much closer to a shoulder or head on a bolt, in the means of setting the dies more accurately, and in the employment of a positive stop gauge for cutting duplicate threads. These points together with those which have long been appreciated in all our tools, namely—the quick-opening dies that render all turning back over threads unnecessary, the ready adjustment for any variation in size and the easy manner of keeping the dies sharp—make a most satisfactory die stock. In finish and general make-up the new tools will be found superior to those we have manufactured heretofore.



Whitworth Standard Threads.

Our Machinists' Sets are sent out with standard sizes and with second taps unless otherwise ordered, but we can furnish them with taper taps for rough iron work, if desired.

1756 Set AA

Cutting	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$in.
	24	20	18	16	14	12

With 6 sets of dies and 6 taps, complete in case £2 10 0

Extra dies, per single set (4 pieces) 3/6

1757 Set A

Cutting	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$in.
	20	18	16	14	12	11	10

With 7 sets of dies and 7 taps, complete in case £3 5 0

Extra dies, per single set (4 pieces) 4/6

1758 Set B

Cutting	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
	20	18	16	14	12	11	10	9	8

With 9 sets of dies and 9 taps, complete in case £5 0 0

Extra dies, per single set (4 pieces) 5/6

1759 Set B2

Cutting	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
	12	11	10	9	8

With 5 sets of dies and 5 taps, complete in case £3 15 0

Extra dies, per single set (4 pieces) 5/6

1760 Set B3

Cutting	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1in.
	24	20	18	16	14	12	11	10	9	8

This is a combination set containing a size AA die stock with 5 sets of dies for $\frac{3}{16}$in. to $\frac{7}{16}$in. inclusive, and a size B2, complete with taps in case £5 17 6

1761 Set BB

Cutting	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$ & $1\frac{1}{4}$in.
	12	11	10	9	8	7

With 6 sets of dies and 7 taps, complete in case £6 6 0

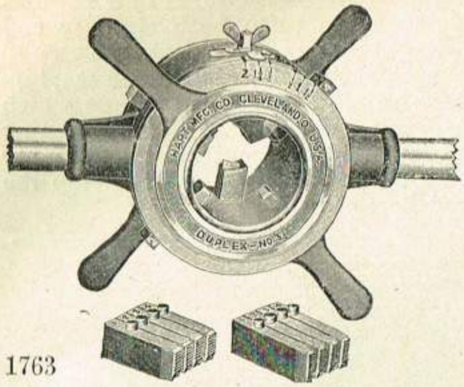
Extra dies, per single set (4 pieces) 6/-

1762 Set BB2

Cutting	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$ & $1\frac{1}{4}$in.
	20	18	16	14	12	11	10	9	8	7

This is a combination set containing a size A die stock with 6 sets of dies for $\frac{1}{4}$in. to $\frac{5}{8}$in., and a size BB with 4 sets for $\frac{3}{4}$in. to $1\frac{1}{4}$in., complete with taps in case £8 0 0

Hart's Patent "Duplex" Die Stocks For Pipe.


HART MFG CO CLEVELAND O USA
DUPLEX-No. 3

1763

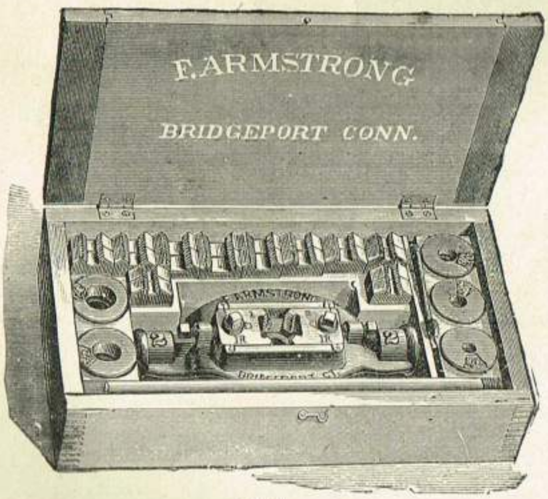
The superiority of these tools is due principally to the adjustable, quick-opening dies. Turning back over finished threads is unnecessary; dies throw open and stock is lifted off, thus saving time and wear on dies. Adjustment is instantly made to suit any variation in size of pipe fittings, so that tight joints can always be obtained. The dies also cut easier than ordinary ones, because of the clearance given them, and they can be sharpened as readily as a chisel. When set, dies are clamped absolutely rigid; this is accomplished without the use of any small thumbnuts or screws which are easily broken. Adjustable guides that centre pipe accurately do away with all loose rings and collets. No wrenches or extra tools whatever are required for working our Die Stocks. The cutting-off device cuts pipe square and clean, leaving no burr on inside.

PRICES.

No.	For Threading	With Cut-off. £	s.	d.	No.	For Threading	With Cut-off. £	s.	d.
1	⅛, ¼, ⅜, ½, ¾in. pipe	2	5	0	3½	½, ¾, 1, 1¼, 1½, 2in. pipe	4	0	0
2	¼, ⅜, ½, ¾, 1, 1¼in. pipe	2	16	6	4	1½, 2, 2½, 3in. pipe	6	10	0
3	1, 1¼, 1½, 2in. pipe	3	10	0	5	2½, 3, 3½, 4in. pipe	8	10	0

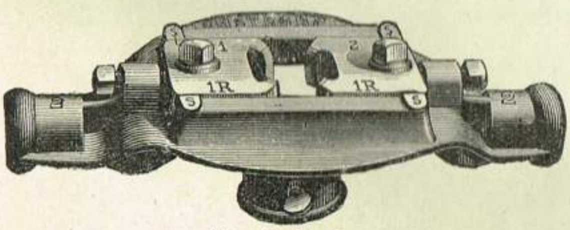
With the exception of those for ⅛in. pipe, each set of dies threads two sizes.

Armstrong's Adjustable Stock and Dies For Pipe.



1764

No. 2.—In case.



No. 2 Stock.

ADVANTAGES.

1st.—The Armstrong Improved Dies can be adjusted to the variations in the size of fittings.

2nd.—The Armstrong Dies have a double taper, that is, the taper at the entrance for the first few threads is greater in degree than the standard taper, which forms a lead to the Dies, causing them to start on the pipe without filing, even when there is a swell or burr, and requiring no pressure whatever to start the Dies on the pipe.

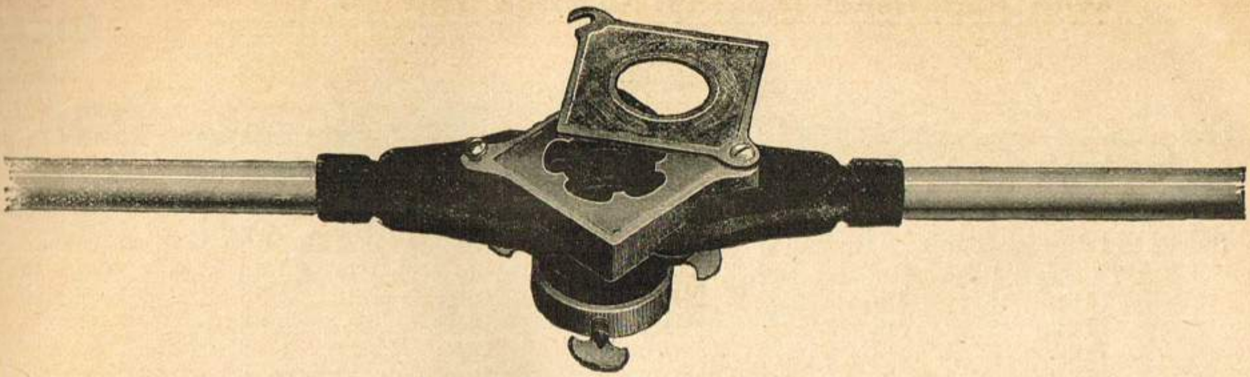
3rd.—The Armstrong Dies can be sharpened without drawing the temper, and can be kept in good condition easily.

These Dies can be sharpened the same as any edge tool.

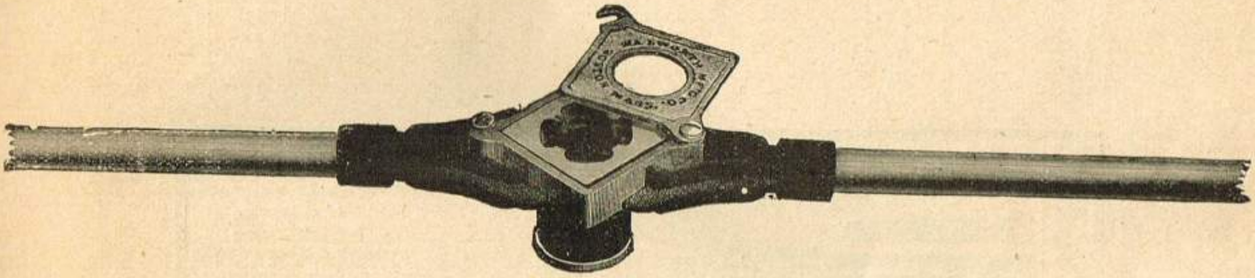
PRICES.

No. 1	Stock, with Four Dies, ⅛, ¼, ⅜, and ½in., and Bushings	25/-
No. 2	,, Five Dies, ¼, ⅜, ½, ¾, and 1in., and Bushings	33/6
No. 2½	,, Four Dies, ½, ¾, 1, and 1¼in., and Bushings	33/6
No. 3	,, Four Dies, 1, 1¼, 1½, and 2in., and Bushings	67/6

Walworth's Patent Solid Die Stocks.



1765 Walworth Die Stock, No. 2.



1765A Walworth Die Stock, Nos. 0, 1, and 1½.

Their special features are—

1. Lightness, combined with strength.
2. They cut a perfect Thread by once running over the Pipe.
3. The handles, being detachable, admit of the tools being used in a trench or confined space; a great convenience under many circumstances.
4. They are more portable, folding to a third of their entire length.
5. No time is lost in adjusting or changing Dies.
6. The larger size Stocks are fitted with Patent Leader Screws, which ensure and facilitate the correct starting of the thread, and also safeguard against injury or breakage of Dies while turning the handles.
7. Absolute accuracy of Threads, no tendency to split tubes or cross-thread them.

The Dies are world-famed for Quality and Excellence.

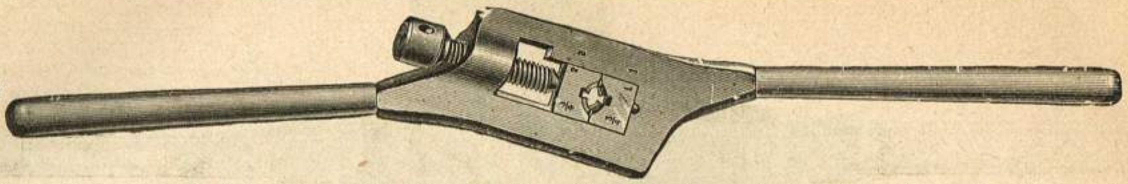
For Screwing Iron Gas Tubes.

Number of Stock.	Full Length of Stock.	To Screw.	Price. £	s.	d.		Number of Stock.	Full Length of Stock.	To Screw.		Price. £	s.	d.	
No. 0	29in.	⅛ ¼ ⅜ ½in.	0	18	9	Per Set, including Stock, Dies and Guides, complete in Box.	No. 1½C	43in.	¾ 1 1¼ 1½in.		1	13	0	Per Set, including Stock, Dies and Guides, complete in Box.
,, 0A	29in.	¼ ⅜ ½in.	0	15	0		,, 1½D	43in.	1 1¼ 1½in.		1	7	0	
,, 0B	29in.	¼ ⅜ ½ ¾in.	0	19	0		,, 1½D	43in.	1 1¼ 1½in.	With Patent Leader Screws.	1	12	0	
,, 0C	29in.	⅛ ¼ ⅜ ½ ¾in.	1	2	6		,, 2	51in.	1¼ 1½ 2in.		2	1	6	
,, 1	36in.	¼ ⅜ ½ ¾ 1in.	1	10	0		,, 2B	51in.	1 1¼ 1½ 2in.		2	10	0	
,, 1A	36in.	½ ¾ 1in.	1	2	6		,, 3	81in.	2½ 3in.		4	15	0	
,, 1B	36in.	⅛ ¼ ⅜ ½ ¾ 1in.	1	14	0		,, 3A	81in.	2¼ 2½ 3in.		5	15	0	
,, 1½	43in.	¾ 1 1¼in.	1	7	0		,, 3B	81in.	2 2½ 3in.		5	15	0	
,, 1½A	43in.	½ ¾ 1 1¼in.	1	13	0		,, 3C	81in.	2 2¼ 2½ 3in.	With 4 Handles.	6	15	0	
,, 1½B	43in.	½ ¾ 1 1¼ 1½in.	2	0	0		,, 4	81in.	2½ 3in.		5	5	0	

Stocks and Dies for Smiths' Use.

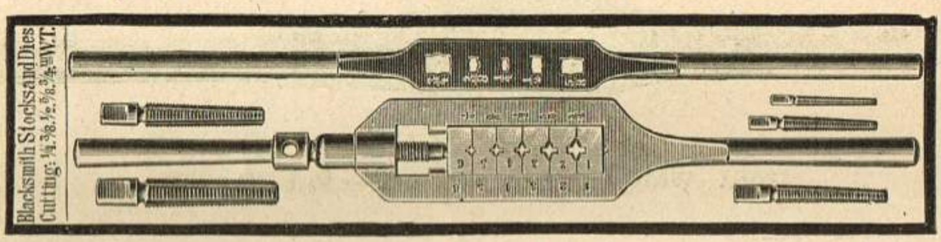
With Flat Head Taps not to Drop Through the Nut.

1766



Stocks and dies for Smiths' Use, with Flat Heads not to drop through the Nut. Best English make.

To screw $\frac{1}{4}$ - $\frac{5}{16}$ $\frac{3}{8}$in.	with Taper and Plug Tap to each size		£0 14 6 each.
Ditto $\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$in.	Ditto	Ditto	0 15 6 ,,
Ditto $\frac{3}{8}$ $\frac{7}{16}$ $\frac{1}{2}$in.	Ditto	Ditto	0 16 6 ,,
Ditto $\frac{1}{4}$ $\frac{5}{16}$ $\frac{3}{8}$ $\frac{7}{16}$ $\frac{1}{2}$in.	Ditto	Ditto	1 3 0 ,,
Ditto $\frac{3}{8}$ $\frac{1}{2}$ $\frac{5}{8}$in.	Ditto	Ditto	0 18 6 ,,
Ditto $\frac{3}{8}$ $\frac{7}{16}$ $\frac{1}{2}$ $\frac{5}{8}$in.	Ditto	Ditto	1 3 0 ,,
Ditto $\frac{1}{2}$ $\frac{5}{8}$ $\frac{3}{4}$in.	Ditto	Ditto	1 2 0 ,,
Ditto $\frac{5}{8}$ $\frac{3}{4}$ 1in.	Ditto	Ditto	1 12 6 ,,
Ditto $\frac{1}{2}$ $\frac{5}{8}$ $\frac{3}{4}$ 1in.	Ditto	Ditto	1 18 6 ,,
Ditto $\frac{1}{2}$ $\frac{5}{8}$ $\frac{3}{4}$ $\frac{7}{8}$ 1in.	Ditto	Ditto	2 5 6 ,,
Ditto $\frac{3}{4}$ 1 $1\frac{1}{4}$in.	Ditto	Ditto	1 17 6 ,,

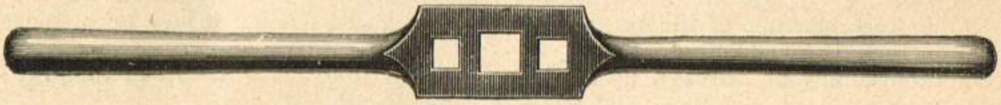


1767 Special value. Best Continental make Blacksmiths' Stocks and Dies, with Taper Tap to each size, and also Tap Wrench. To screw $\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$ $\frac{5}{8}$ $\frac{3}{4}$in., 13/6 per set

1768 Ditto Ditto To screw $\frac{1}{4}$ $\frac{5}{16}$ $\frac{3}{8}$ $\frac{7}{16}$ $\frac{1}{2}$in., 10/6 ,,

Tap Wrenches.

1769



1769 Tap Wrenches for Engineers' Taps—

$\frac{1}{8}$ & $\frac{3}{16}$in.	$\frac{3}{16}$ & $\frac{1}{4}$in.	$\frac{1}{4}$ $\frac{5}{16}$ $\frac{3}{8}$in.	$\frac{3}{8}$ $\frac{7}{16}$ & $\frac{1}{2}$in.	$\frac{1}{2}$ & $\frac{5}{8}$in.	$\frac{5}{8}$ & $\frac{3}{4}$in.	$\frac{3}{4}$ & $\frac{7}{8}$in.	$\frac{7}{8}$ & 1in.
2/-	2/-	2/9	3/3	4/-	4/9	5/3	6/-

1 & $1\frac{1}{8}$in.	$1\frac{1}{8}$ & $1\frac{1}{4}$in.	$1\frac{3}{8}$ & $1\frac{1}{2}$in.	$1\frac{5}{8}$ & $1\frac{3}{4}$in.	$1\frac{7}{8}$ & 2in.
7/-	7/6	9/6	12/-	14/6

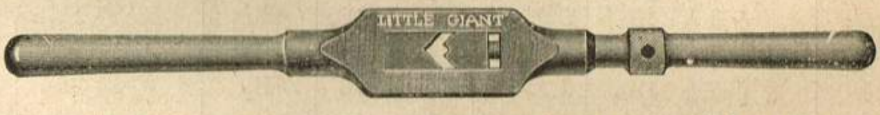
1770 Tap Wrenches for Iron Gas Taps—

$\frac{1}{8}$ $\frac{1}{4}$ $\frac{3}{8}$in.	$\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$in.	$\frac{3}{8}$ $\frac{1}{2}$ $\frac{3}{4}$in.	$\frac{1}{2}$ $\frac{3}{4}$ 1in.	$\frac{3}{4}$ 1 $1\frac{1}{4}$in.	1 $1\frac{1}{4}$ $1\frac{1}{2}$in.	$1\frac{1}{2}$ $1\frac{3}{4}$ 2in.	$2\frac{1}{4}$ $2\frac{1}{2}$in.
4/-	5/3	6/6	8/-	10/-	12/6	18/6	23/6

"Little Giant" Tap Wrenches.

Adjustable.

1771



An adjustable Tap and Reamer Wrench, at a reasonable price, is here illustrated.

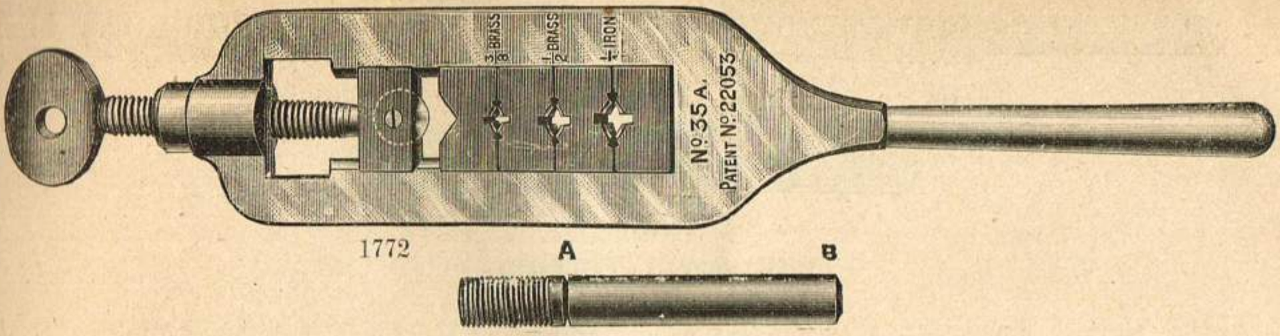
Jaws made of the Best Tool Steel.

We fully warrant them equal to any made. They are light, strong, and durable. Workmanship of the highest order.

Prices :—Size No. 0, length 7in., for taps $\frac{1}{16}$in. to $\frac{1}{4}$in., 5/6 each ; Size No. 5, length $10\frac{1}{2}$in., for taps $\frac{3}{16}$in. to $\frac{1}{2}$in., 7/6 each ; Size No. 6, length 15in., for taps $\frac{1}{4}$in. to $\frac{3}{4}$in., 9/6 each ; Size No. 7, length 20in., for taps $\frac{3}{8}$in. to 1in., 12/6 each ; Size No. 8, length 42in., for taps $\frac{3}{4}$in. to $1\frac{1}{2}$in., 25/- each.

Gas Fitters' Combination Stocks and Dies and Tube Cutter.

For Screwing and Cutting Brass or Copper Tube, with Taper and Plug Taps to each size.



1772

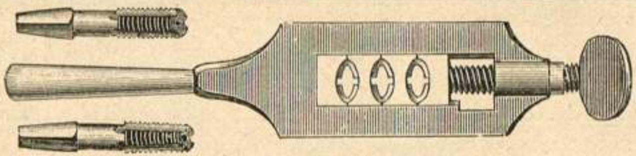
This handy Gas Fitters' Tool combines in one frame Dies for screwing three or more sizes of tubes, and a Tube Cutter for cutting off all sizes the dies will screw. The **V**-shaped recess in the tube-holder is sufficiently wide to hold the tube rigidly when the cutter is in use, and this holder, and also the cutter block and cutter, are so accurately fitted that with ordinary care the cutter will last for months in constant use. The Tube should not be cut right through, but nicked deeply (as shown at **A**) and broken off after taken out. **B** represents tube after being so cut and broken off. We claim for this cutting-off arrangement that is not only effects a considerable saving of files, but it makes in much less than half the time a clean and true cut, and costs about half the price of a separate tube cutter.

For ¼in. Iron and ½ ⅜in. Copper Tube	£1	1	6
⅛ ¼ ⅜in. Copper Tube	1	0	0
¼ ⅜ ½in. ,, ...	1	1	6
⅜ ½ ⅝in. ,, ...	1	1	6
¼ ⅜ ½ ⅝in. ,, ...	1	3	6
⅜ ½ ⅝ ¾in. ,, ...	1	6	0

Extra Cutters, 1/- each.

Gas Fitters' Stocks and Dies for Brass or Copper Tubes.

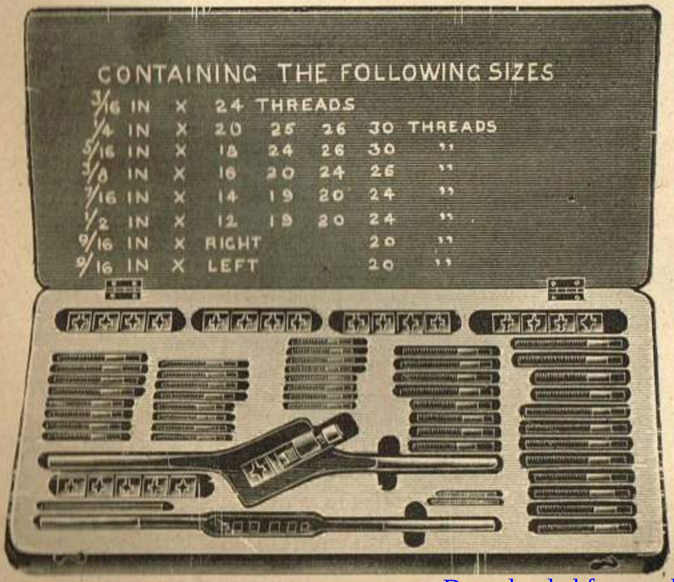
1773



With Taper and Plug Taps to each size.

	Best English.	Continental Make.
Cutting ¼in. Iron and ⅜ ½in. Brass	15/6	10/-
,, ⅛ ¼ ⅜in. Brass	15/6	—
,, ¼ ⅜ ½in. ,, ...	15/6	9/-
,, ⅜ ½ ⅝in. ,, ...	15/6	9/-
,, ¼ ⅜ ½ ⅝in. ,, ...	17/6	11/-
,, ⅜ ½ ⅝ ¾in. ,, ...	20/-	—

Cycle Stocks and Dies.



Special Sets of Stocks and Dies for Cycle Work.

1774 This set containing 23 different sizes and Threads, as shown in the Illustration, comprises all that is required for Repairing Work, and has Plug and Taper Taps to each size.

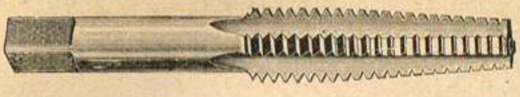
Price £3, complete.

Neatly fitted in Recessed Hardwood Case.

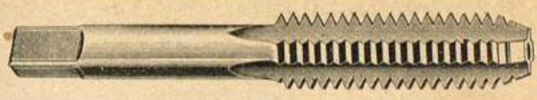
Exceedingly useful in all Repairing Workshops.

A 1⅜in. Bottom Bracket Tap is now included in this set.

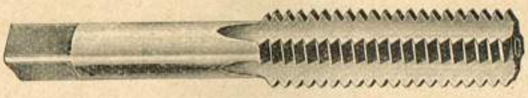
Best Quality Engineers' Taps, Chased and Grooved.



Taper.



Plug.



Bottoming.

Whitworth Thread.

1775

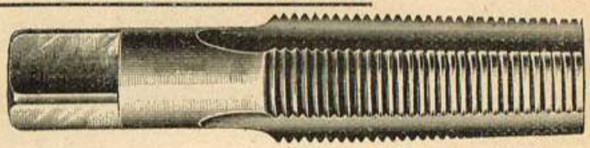
$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$in.	Diameter of Tap.
40	32	24	20	18	16	14	12	12	11	Threads per inch.
1/-	1/1	1/1	1/1	1/2	1/4	1/6	1/8	1/10	2/-	each.
$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	2in.	Diameter of Tap.
10	9	8	7	7	6	6	5	5	$4\frac{1}{2}$	Threads per inch.
2/6	3/-	3/9	4/3	4/9	5/9	7/-	8/6	10/6	13/6	each.

We append the following table, showing the different sizes of Drills that should be used when a full thread is to be tapped in a hole :—

Diameter of Tap	$\frac{1}{4}$,	$\frac{5}{16}$,	$\frac{3}{8}$,	$\frac{7}{16}$,	$\frac{1}{2}$,	$\frac{9}{16}$,	$\frac{5}{8}$,	$\frac{3}{4}$,	$\frac{7}{8}$,	1,	$1\frac{1}{8}$,	$1\frac{1}{4}$,	$1\frac{3}{8}$,	$1\frac{1}{2}$,	$1\frac{5}{8}$,	$1\frac{3}{4}$,	$1\frac{7}{8}$,	2in.
Drill for Whitworth Thread	$\frac{3}{16}$,	$\frac{15}{64}$,	$\frac{9}{32}$,	$\frac{11}{32}$,	$\frac{3}{8}$,	$\frac{7}{16}$,	$\frac{1}{2}$,	$\frac{5}{8}$,	$\frac{23}{32}$,	$\frac{27}{32}$,	$\frac{15}{16}$,	$1\frac{1}{16}$,	$1\frac{5}{32}$,	$1\frac{9}{32}$,	$1\frac{23}{64}$,	$1\frac{1}{2}$,	$1\frac{37}{64}$,	$1\frac{45}{64}$,,

Taps for Gas or Steam Tubes.

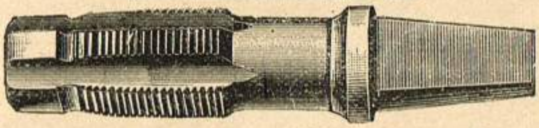
The Diameter of the Tap is larger than the size marked upon it by twice the thickness of the pipe—thus a $\frac{3}{4}$in. Tap is a shade over 1in. in diameter, and will Screw Couplings for $\frac{3}{4}$in. iron Gas Pipe.



1776

$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2in.	Size marked upon Taps, viz. : internal dia. of Pipe.
28	19	19	14	14	14	11	11	11	11	11	Threads per inch.
1/-	1/3	1/6	1/10	2/2	2/6	3/3	4/6	5/9	8/6	11/-	Price, each.

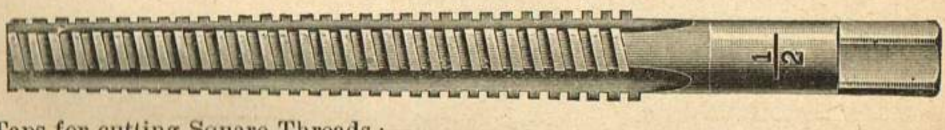
Rimer Gas Taps.



1777

	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2in.
Rimer Gas Taps	3/9	4/6	5/3	6/9	9/-	11/6	18/-	22/6 each.
Five-fluted Gas Main Rimers ...	2/3	2/6	3/-	3/6	5/-	6/-	9/-	11/6 ,,

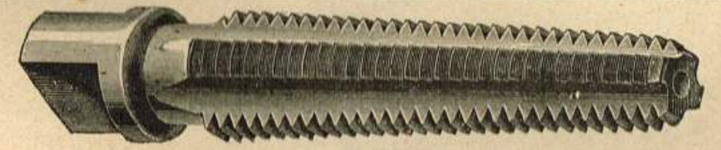
Square Thread Taps.



1778

Best Taper Taps for cutting Square Threads :—
$\frac{1}{4}$in. 3/-, $\frac{3}{8}$in. 3/-, $\frac{1}{2}$in. 3/9, $\frac{5}{8}$in. 4/9, $\frac{3}{4}$in. 7/-, $\frac{7}{8}$in. 9/-, 1in. 11/-, $1\frac{1}{8}$in. 13/6, $1\frac{1}{4}$in. 16/-, $1\frac{3}{8}$in. 18/6, $1\frac{1}{2}$in. 21/-.

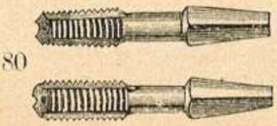
Smith's Taps.



1779

Flat Head Taps for Smith's Use—Taper and Plug per pair.

$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$in.
2/3	2/6	3/-	3/3	3/6	4/3	4/9	5/9	6/9	8/-	9/- per pair.



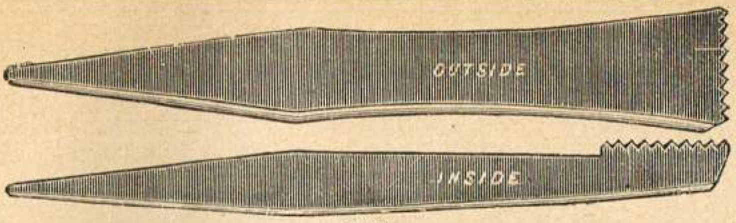
1780

Brass Gas Taps.

TAPER OR PLUG.

Size...	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$in.
Price	10d.	11d.	1/1	1/3	1/6 each.

Best Engineers' Screw Tools.

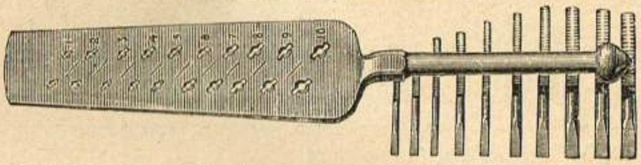


1781

Number of Threads per inch ...	$4\frac{1}{2}$	5	6	7	8	9	10	11	12	14	16	18	20	24	40
Diameter of Thread—Whitworth	2	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{3}{16}$	$\frac{1}{8}$in.
Price, Screw Tools, per pair ...	3/-	3/-	2/6	2/4	2/4	2/2	2/2	1/8	1/8	1/4	1/4	1/4	1/4	1/4	1/4

Best Lancashire Clock Screw-plates.

Standard Threads.



1782 With One Tap (screwed and squared) to each size.

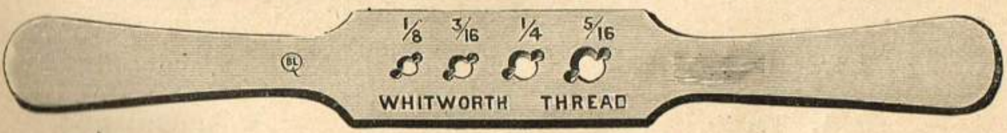
	Black Notched.
6 Sizes—Each Screw-plate ...	3/-
7 ,, ,,	3/8
8 ,, ,,	4/4
9 ,, ,,	5/-
10 ,, ,,	5/8
12 ,, ,,	7/6
14 ,, ,,	10/-
16 ,, ,,	12/6

1783 Special Bright Whitworth Pitch Screw-plate, 7 Size, $\frac{1}{16}$in. to $\frac{1}{4}$in., 5/6 each.

1784 New Registered Pattern Lancashire-made Screw-plates, with Tap Wrench combined. The Plates are perforated near handle so as to form a most convenient Tap Wrench, and one that cannot be mislaid. These Plates are tapped to Whitworth Standard sizes, a most important improvement in small plates; have notched holes with Taps to each size.

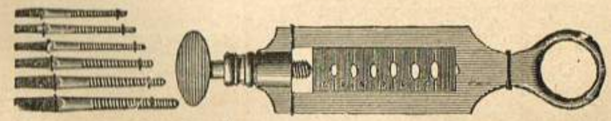
No. 1	Cutting	$\frac{1}{16}$ $\frac{3}{32}$ $\frac{1}{8}$ $\frac{5}{32}$ $\frac{3}{16}$ $\frac{7}{32}$ $\frac{1}{4}$in.,	5/6	each;	Ditto, if with Best Fluted Taps,	11/6 each.
,, 2	,,	$\frac{1}{8}$ $\frac{5}{32}$ $\frac{3}{16}$ $\frac{7}{32}$ $\frac{1}{4}$ $\frac{9}{32}$ $\frac{5}{16}$in.,	7/6	,,	Ditto, ,, ,,	14/- ,,
,, 3	,,	$\frac{1}{4}$ $\frac{9}{32}$ $\frac{5}{16}$ $\frac{11}{32}$ $\frac{3}{8}$in.,	8/6	,,	Ditto, ,, ,,	13/6 ,,
,, 4	,,	$\frac{3}{8}$ $\frac{13}{32}$ $\frac{7}{16}$ $\frac{15}{32}$ $\frac{1}{2}$in.,	9/6	,,	Ditto, ,, ,,	16/- ,,

Double-ended Screw-plates—Whitworth Thread.



4 Sizes in each Screw-plate. 1785 With one Tap (screwed and squared) to each size.

To Screw	To Screw	To Screw	To Screw
$\frac{3}{16}$ $\frac{5}{32}$ $\frac{1}{8}$ $\frac{3}{32}$	$\frac{1}{4}$ $\frac{3}{16}$ $\frac{5}{32}$ $\frac{1}{8}$	$\frac{5}{16}$ $\frac{1}{4}$ $\frac{3}{16}$ $\frac{1}{8}$	$\frac{3}{8}$ $\frac{5}{16}$ $\frac{1}{4}$ $\frac{3}{16}$
3/-	3/3	4/-	4/6 each.



1786 Best Quality Continental-make Bright Screw-plates, with Loose Dies, Ring-ends and Screw Head—

4	5	6	7	8	9	10 holes.
3/6	3/9	4/-	4/6	5/6	6/-	7/6 each.

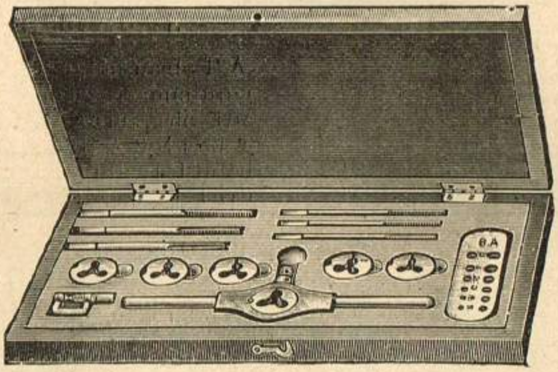
Best Quality British Association Standard Screw-plates and Taps.

The B.A. Screw Threads range from No. 0, being $\frac{236}{1000}$ of an inch (or about $\frac{1}{4}$in.) outside diameter, to No. 16, which is $\frac{31}{1000}$ of an inch (or about $\frac{1}{32}$in.) outside diameter. Being proportionately diminishing in size, this Thread will be found very useful for all purposes where strong, substantial, and standard screws of the given sizes are required.

Case No. 1.

1787 London-made B.A. Stocks and Dies, containing 1 Circular Adjustable Die each Nos. 0, 1, 2, 3, 4 and 5, with Stock; 1 best Fluted Tap each 0 to 5; 1 Drill Gauge for Tapping and Screwing Sizes, and Micrometer.

Price 32/6, complete.



Case No. 2.

1788 Pocket Case London-made B.A. Stocks and Dies, containing 1 Circular Adjustable Die each Nos. 6, 7, 8, 9, and 10, with Stock; 1 best Tap each Nos. 6 to 10; 1 Drill Gauge for Tapping and Screwing sizes Nos. 6 to 10.

Price 26/-, complete.

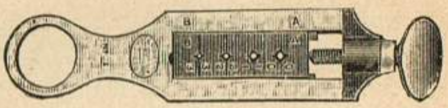
Gun-metal B.A. Stocks.

1789

No. 1 Taking Dies Nos. 0, 1, 2, and 3, 7/6 each.
No. 2 ,, ,, 4, 5, 6, and 7, 7/- ,,
No. 3 ,, ,, 8, 9, and 10 6/6 ,,

Circular Dies to fit above.—Nos. 0, 1, 2, and 3, 2/6 each; Nos. 4, 5, 6, 7, 2/3 each; Nos. 8, 9, 10, 2/- each.

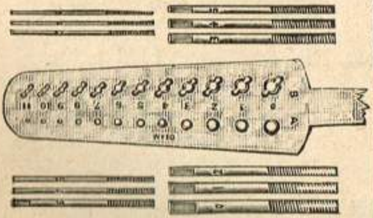
B.A. Stocks and Dies.



1790

No. 1. Cutting Nos. 0, 1, 2, and 3, 10/6 each.
No. 2. ,, ,, 4, 5, 6, and 7, 10/- ,,
No. 3. ,, ,, 8, 9, and 10 9/- ,,

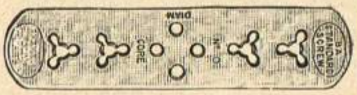
B.A. Screw-plate and Taps.



1791

Special Screw-plate with Taps, Cutting Nos. 0 to 11, 6/- each.

B.A. Screw-plates.



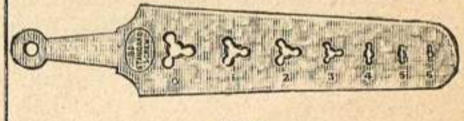
1792

These Plates have 4 Cutting and 4 Gauge Holes.

PRICES.

No. 0 and 1, 6/6 each size.
No. 2 to 5, 5/6 ,,
No. 6 to 12, 4/6 ,,
No. 13 to 16, 3/6 ,,

B.A. Taper Screw-plates.



1793

PRICES.

No. 1, containing Sizes No. 0 to 6, 6/-
No. 2, containing Sizes No. 7 to 16, 6/-

B.A. Taps.

1794 Best Fluted ... ... 1/4 each.

1795 Best Squared Taps ... 1/2 each.

1796 Plain Taps ... ... 8d. each.

B.A. Gauges.

1797 No. 1, with plain holes, for Tapping and Screwing sizes Nos. 0 to 16, 12/6 each.

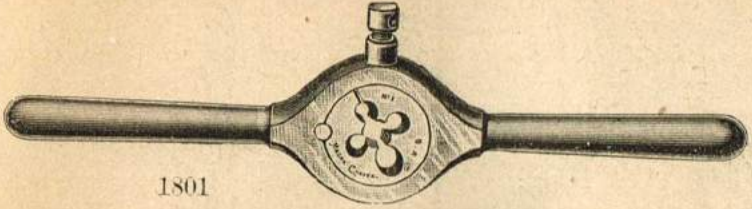
1798 No. 2, Ditto, with Tapped Holes for Gauging Screws Nos. 0 to 16, 17/6 each.

B.A. Screw Chasers, Inside or Outside.

1799 Nos. 0 to 6, 1/- each.
1800 Nos. 7 to 14, 1/6 ,,

B. A. and Cycle Screw-plates.

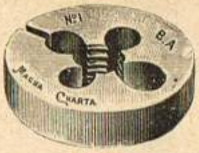
B. A. Stocks.



1801

No. 1 Size Holding Dies, Nos. 10 to No. 5	4/3 each.
No. 2 Size Holding Dies, Nos. 4 to No. 0	4/9 „

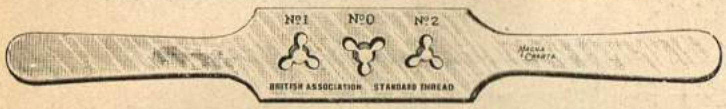
Dies For B. A. Stocks.



1806

Circular Split Dies,	Nos. 0 to 8	2/3 each.
Ditto,	Nos. 9 and 10	2/9 „

B.A. Screw-plates Without Taps.



1802 Each Plate containing three sizes.

Nos. 0, 1, 2
„ 3, 4, 5
„ 6, 7, 8
„ 9, 10, 11

Price ... ... 3/- each Plate.

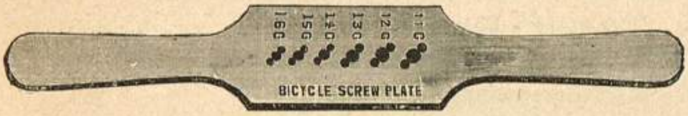
Small Size B.A. Plates.

1807

These Plates contain only one hole in each plate.

Sizes Nos. 12 to 16	1/9 each.

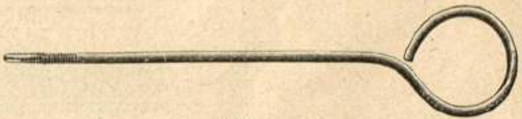
Cycle Screw-plates.



1803

Cutting from Nos. 9 to 14 Gauge, with Ring Taps ...	3/6 each.
Cutting from Nos. 11 to 16 Gauge, with Ring Taps ...	3/6 „
Cutting from Nos. 13 to 18 Gauge, with Ring Taps ...	3/6 „

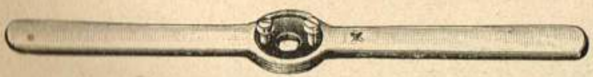
Ring Taps.



1808

All sizes from No. 9 to No. 18 ... 5d. each.

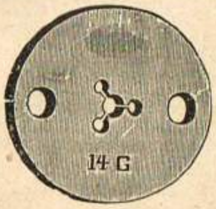
Improved Cycle Die Holders.



1804

Price ... ... 1/3 each.

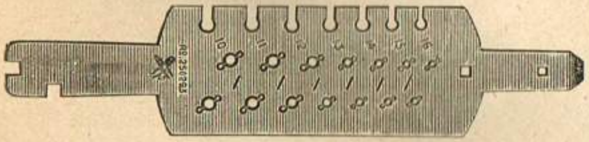
Best Cycle Dies.



1809

All Gauges from No. 9 to No. 18, 10d. each.

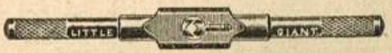
Registered Cycle Screw-plate.



1805 No. 1 Cutting 4 sizes, with 2 holes to each size and 1 Tap to each size, 3/6 each.

1805A No. 2 Ditto, Cutting 7 sizes, 4/6 each.

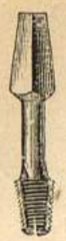
"Handy" Tap Wrenches.



1810

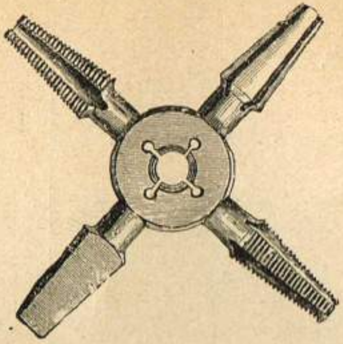
No. 1, Holds Taps,	0 to $\frac{3}{16}$ in.	2/- each.
No. 2 „	0 to $\frac{1}{4}$ in.	3/- „
No. 3 „	0 to $\frac{3}{8}$ in.	4/- „

Burner Taps.

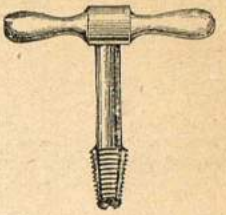


1811

Burner Tap, with Brace Shank, 10d. each.



1812 Four-leg Burner Tap, with $\frac{3}{8}$in. Die, Rimer, Turnscrew, $\frac{3}{8}$in. Brass Tap, and Burner Tap, 3/6 each.



1813

T-handled Burner Taps, 1/6 each.

Engineers' Taper Fluted Reamers.

1814

Size	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$in.
Price	2/-	2/-	2/-	2/3	2/3	2/6	2/9	3/4	3/9	4/3	4/6	4/9	5/3	5/9	6/-	7/-	8/-	9/6	10/6 each.

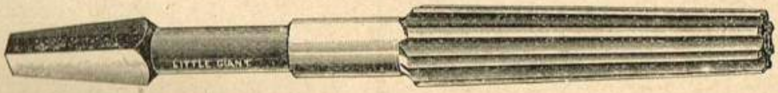
Bit Stock Taper Reamers.

1815 Taper 1in. to the foot; Diameter at large end of flute is $\frac{1}{16}$in. larger than the nominal size.

Size	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$in.
Price	1/9	2/-	2/2	2/4	2/8	3/-	3/6	4/-	4/6 each.

"Little Giant" Reamers.

For Brace Bit Use



1816 For reaming-out and making true, smooth holes in wood or iron. Each Reamer tapers $\frac{1}{8}$in., and follows from the smallest to the largest.

PRICE.

$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$in.
9d.	10d.	1/-	1/3	1/6	1/9	2/-	2/3	2/6 each.

Price per set of 5, in Case, as Fig. 1, $\frac{1}{4}$in. to $\frac{1}{2}$in., 5/6 each.

Price per set of 9, in Case, as Fig. 2, $\frac{1}{4}$in. to $\frac{3}{4}$in., 14/- each.

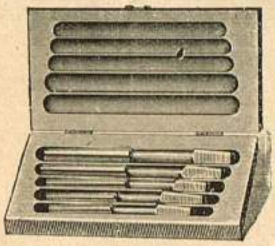


Fig. 1.

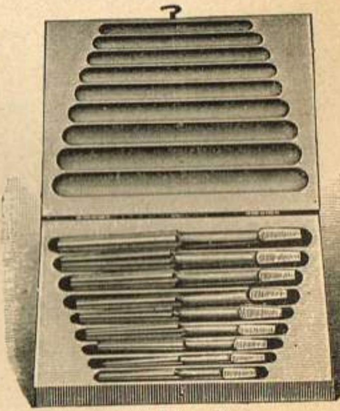
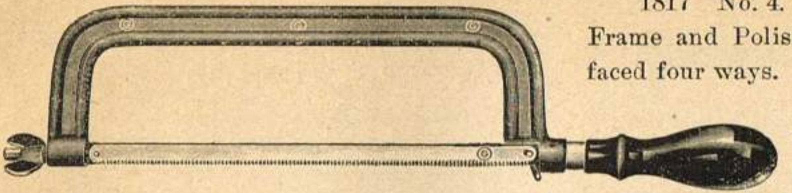


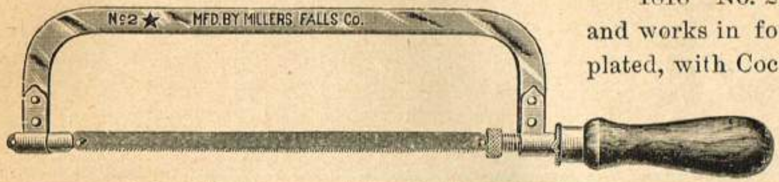
Fig. 2.

Hack-saws and Frames.



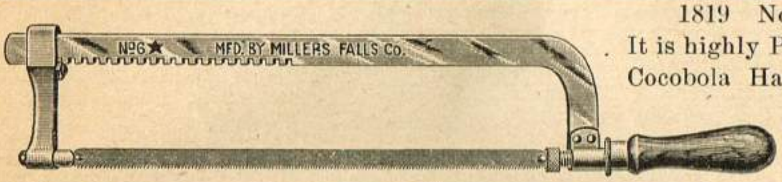
1817 No. 4. Cast-iron Frame with Japanned Frame and Polished Wood Handle. Blades can be faced four ways.

No. 4A, 8in., 1/3 ; No. 4B, 9in., 1/3 ; No. 4C, 10in., 1/8 each.


No2 ★ MFD. BY MILLERS FALLS Co.

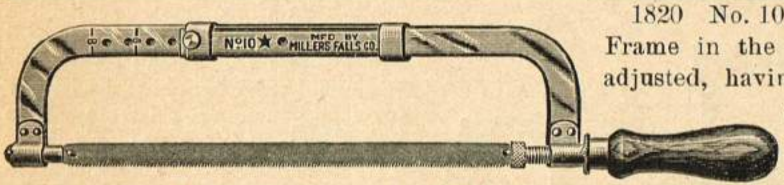
1818 No. 2. Solid Frame, hold 8in. blades only, and works in four directions. Polished and Nickel-plated, with Cocobola Handle.

Price ... ... 3/- each.


No6 ★ MFD. BY MILLERS FALLS Co.

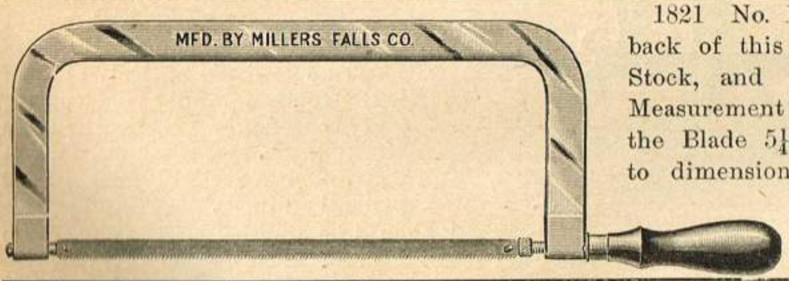
1819 No. 6. This Frame is stiff and strong. It is highly Polished, heavily Nickel-plated, has a Cocobola Handle, and will face blades in four directions. Adjustable to take blades from 6in. to 12in. Our present method of straining blades by simply turning the handle will be found a great improvement over original pattern with winged nut. Note the ring, which turns down over end of the blade, and prevents the latter from falling off the pin when adjusting.

Price ... ... 4/6 each.


No10 ★ MFD. BY MILLERS FALLS CO.

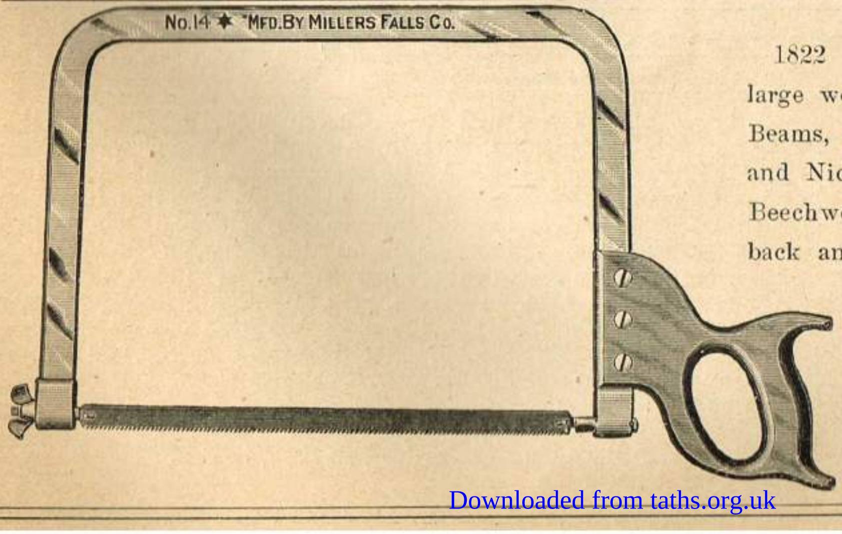
1820 No. 10. We offer this as the best Extension Frame in the market. It is light and quickly adjusted, having strength in the middle, where strength is needed. It is made of tempered Steel, Polished, and Nickel-plated. The Handles are Cocobola wood, highly finished. It carries blades 6, 7, 8, 9, 10, 11, and 12in. long, and is marked for the different lengths. For description about straining, etc., see No. 6.

Price ... ... 4/6 each.


MFD. BY MILLERS FALLS CO.

1821 No. 15. For 12in. Blades only. The back of this Frame is made from heavy Stiff Stock, and will stand any necessary strain. Measurement between the back and points of the Blade 5¼in. Size of the Handle conforms to dimensions of the Frame. Polished and Nickel-plated.

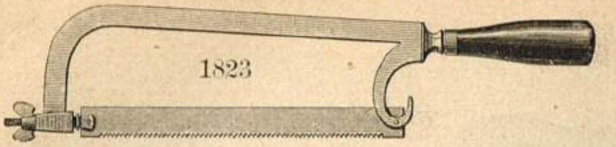
Price ... ... 5/6 each.


No. 14 ✱ MFD. BY MILLERS FALLS Co.

1822 No. 14. This is adapted for large work, such as cutting off Rails, Beams, etc. The back is Polished and Nickel-plated, and the Handle of Beechwood. Measurement between back and saw points 10¼in. Carries 12in. Blades.

Price... ... 6/6 each.

Hack Saws. Hand and Power.



1823 Lancashire Hack Saws and Frames.

4	6	8	10	12in.
2/6	3/6	4/6	5/6	6/6 each.

1824 Best Lancashire Blades for ditto.

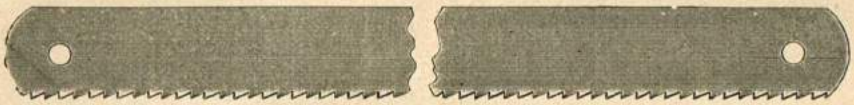
3/-	4/-	6/-	8/-	10/- per doz.

Hack Saw Blades.

		6	7	8	9	10	11	12in.	
1825	Star Hack Saw Blades	2/2	2/3	2/6	2/8	3/3	3/6	4/-	per doz.
1826	Thompson's Flexible Back or Eureka	2/-	2/2	2/4	2/6	2/9	3/3	3/6	„
1827	Goodell Hack Saws	—	—	2/-	2/3	2/6	2/9	3/3	„

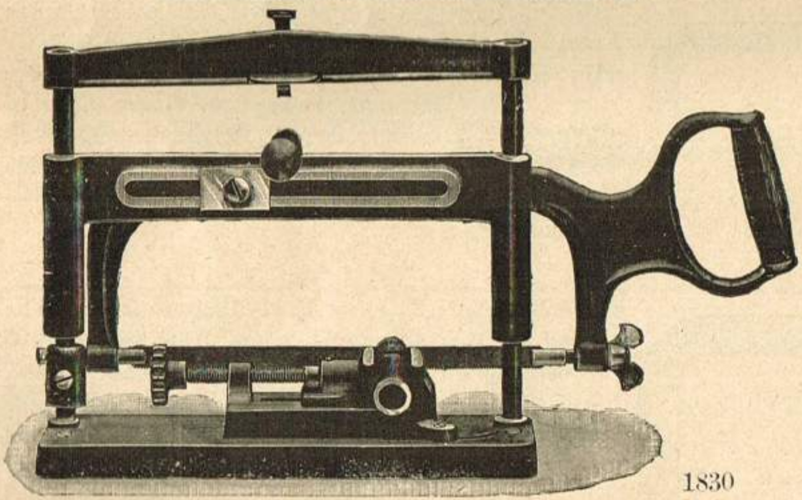
Hack Saw Blades can be supplied with either 14 or 23 points to inch.

"Q and C" Saw Blades for Power Hack Saws.



1828 No. 1 Saws, 12in. by ½in. 4/- per doz., 12in. by ⅝in. 4/- per doz., 12in. by ¾in. 4/6 per doz.
1829 No. 2 Saws, 14in. by ⅝in. X.L. Gauge 5/- per doz., 14in. by ¾in. 7/- per doz., 14in. by ¾in., Extra Quality, 13/6 per doz.

"Invicta" Bench Hack Saw.

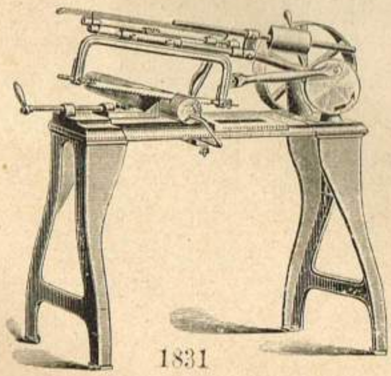


A Bench Hack Saw is a device for which there has long been a place in repair shops, stores and small factories. It can be readily fastened to any bench, and will pay for itself in a week's time where iron, steel or brass rod or tubing have to be cut off. It is fitted with a swivel vice which can be set to saw at an angle. This point alone is a valuable addition to the usefulness of the machine, as the ability to saw on a mitre will often save the operator much time, which would otherwise be spent in filing. The machine is made entirely of iron and steel, is carefully constructed, and thoroughly practical in its working. The cut cannot fail to convey an excellent idea of its general features.

One Goodell 9in. Blade is furnished with each machine, which should be strained well in the frame when in use. It is so constructed that 8in. Blades can be used when desired. Price **12/6** each.

Miller's Falls Co. Star Hack Saws.

(Nett and Carriage Forward.)

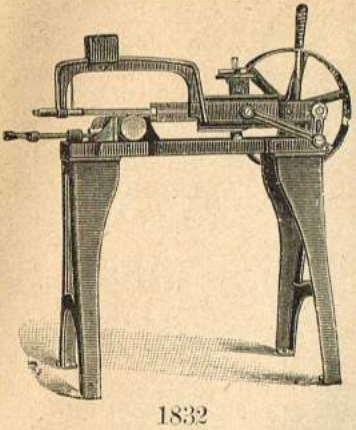


This Machine is designed for cutting iron and steel up to 4½in. diameter. It will also cut tubing, brass, etc., but for such work extra fine tooth blades are supplied. We do not claim great speed in cutting, but metal can be cut much more rapidly in this machine than in a lathe or cutting-off machine, and at less expense than cutting by hand with a chisel. By its use a good percentage of metal is saved, and no squaring-up is necessary as the pieces cut are left smooth. The blades used are the Star, 10, 11 and 12in. in length. No attention is required after the Machine is started, for when the piece has been cut off the Saw stops automatically. The Machine should be run from 45 to 50 revolutions per minute. Weight 150lb.

Price, with 6 Blades, £5 5s.

Adjustable Rest for long work, 7/6 extra.

"Q and C" Shop Saws for Metal. (All Carriage Forward.)



1832

No. 1 Shop Saw.

This Saw has proved very successful and popular, and will cut all classes of material not exceeding 4in. square. It is provided with both power and gravity feeds, so that either may be used according to the class of work to be done. As soon as the piece is cut through the Machine stops automatically. The Machine is started by a clutch on the driving shaft, thus rendering a countershaft unnecessary, and a handle can be attached to the pulley so that it may be run by hand if desired. A hardened steel guide supports the blade close to the work, and so ensures the cutting being square and true.

DIMENSIONS.

Capacity... ...	... 4 by 4in.	Speed per Minute	... 50 revs.
Length of Blade	... 12 ,,	Height over all...	... 36in.
Stroke	... 6 ,,	Floor Space required	...18 by 30in.
Size of Pulley ...	...14 by 2½ ,,	Nett Weight ...	... 136lb.

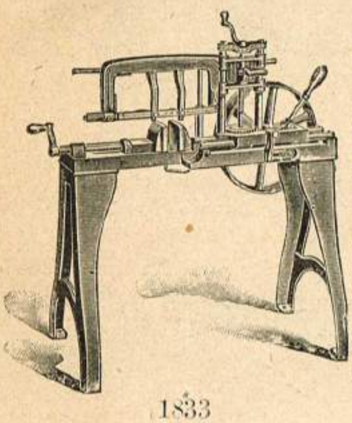
PRICE.

With Six Blades £5

Blades for No. 1 Saw.

12 by ½in., "K," Gauge 21, 15 Points	Price 4/- per doz.
12 by ¾ ,, "M," ,, 21, 15 ,, ...	,, 4/6 ,,
12 by ⅝ ,, "XL," ,, 22, 16 ,, ...	,, 4/- ,,

No. 2 Shop Saw.



1833

The Saw illustrated herewith has a capacity for cutting bars up to 5in. square. The feed is positive, and is actuated automatically at the end of each return stroke, so that there is no pressure on the blade except when it is cutting. The rate of feed can be varied from $\frac{1}{35}$in. to $\frac{1}{5}$in. per minute, and the adjustment can be made while the Machine is running. The saw frame is carried on double guides in both vertical and horizontal directions, and the blade is supported on each side of its cut. These features impart rigidity and ensure accurate cutting. The frame can be instantly raised when the cut is finished by disengaging the split nut from the feed screw. The split nut is held together by a spring that will allow the nut to slip over the thread if any obstruction should occur, thus preventing breakage. No countershaft is necessary, as the Machine is started and stopped by means of a clutch.

DIMENSIONS.

Capacity ...	... 5 by 5in.	Speed per Minute	... 50 revs.
Length of Blade	... 14 ,,	Height over all	... 41in.
Stroke	... 6 ,,	Floor Space ...	... 19 by 34 ,,
Size of Pulley ...	... 14 by 2½ ,,	Nett Weight ...	... 150lb.

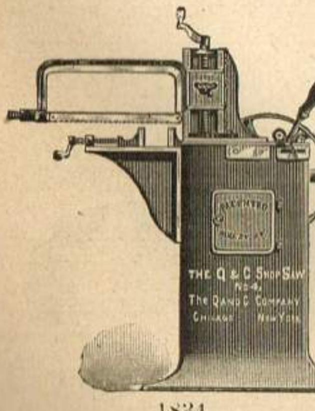
PRICE.

With Six Blades £6 5 0

Blades for No. 2 Saw.

14 by ¾in., Gauge 21, 15 Points	Price 5/6 per doz.
14 by ¾ ,, ,, 18, 15 ,, ...	,, 7/- ,,
14 by ¾ ,, "Special" Gauge 16, 10 Points	,, 13/6 ,,
14 by ⅝ ,, "XL," ,, 22, 16 ,, ...	,, 5/- ,,

No. 4 Shop Saw.


THE Q & C SHOP SAW
No. 4
The Q and C Company
Chicago New York

1834

This is the latest and most improved Machine of its type, and has an increased capacity It has a cabinet base, and the table is in the form of a bracket, which is capable of vertical adjustment. If desired, the table can be entirely removed, enabling very deep work to be brought under the Saw. The horizontal and vertical movements work in **V** slides fitted with gibs for adjustment. The saw blades used with this machine are heavy, and will not break under severe strain. One saw blade should last for two or three days cutting ordinary materials. Several of the machines can be operated by one attendant, as they are fitted with automatic stop. If more convenient, they may be used for cutting off work by placing them where they can be used by men in charge of automatic or other machines. The cost of operation in any case is so little that this method of cutting off shows economy over any other.

DIMENSIONS.

Capacity ...	... 7 by 8in.	Speed per Minute	... 50 revs.
Length of Blade	... 17 ,,	Height over all	... 38in.
Stroke	... 6 ,,	Floor Space ...	... 12 by 32in.
Size of Pulley	... 14 by 3 ,,	Nett Weight ...	... 250lb.

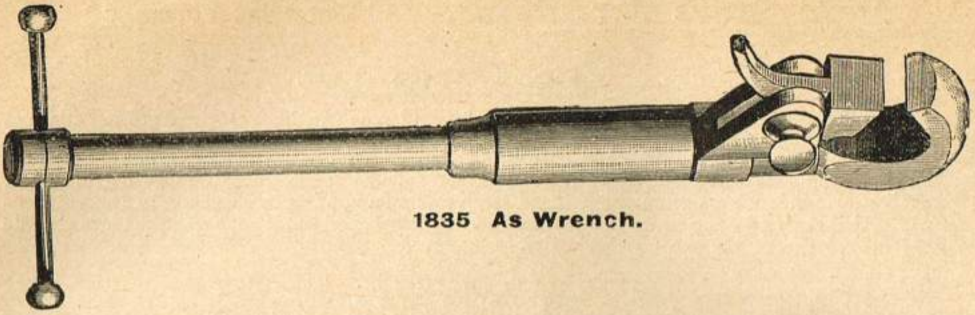
PRICE.

With Six Blades £12 10 0

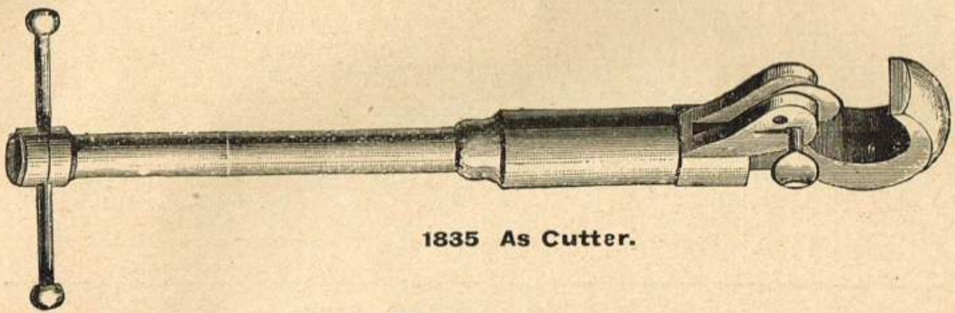
Blades for No. 4 Saw.

17 by 1in., 16 Gauge, 10 Points	Price 11/6 per doz.

Tube Cutters.



1835 As Wrench.



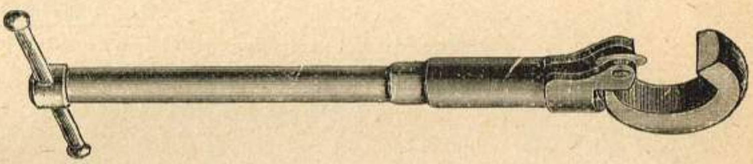
1835 As Cutter.

1835 Tube Cutter and Pipe Wrench Combined.

No. 1. To cut tubes ¼in. to 1ir., 11/- each.

No. 2. Ditto 1¼in. to 2in., 17/6 each.

No. 3. Ditto 2¼in. to 3½in., 25/- each.



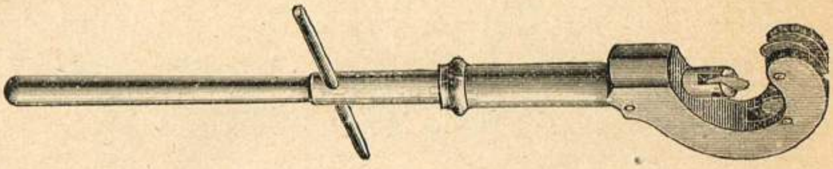
1836

1836 Tube Cutter only.

No. 1. To cut tubes ¼in. to 1in., 9/6 each.

No. 2. Ditto 1¼in. to 2in., 13/6 each.

No. 3. Ditto 2¼in. to 3½in., 19/6 each.



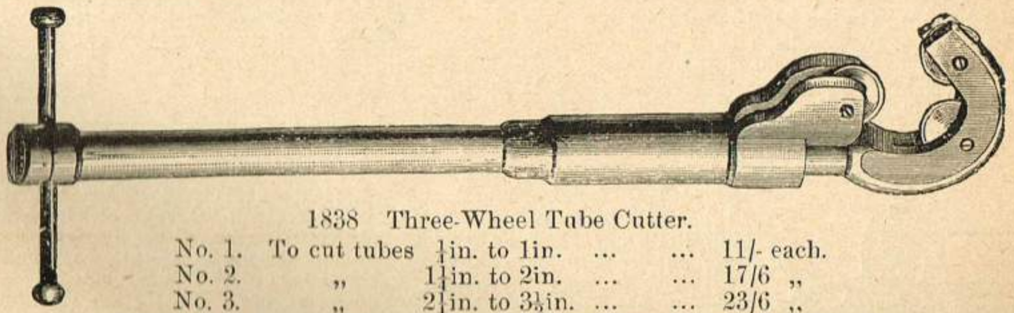
1837

1837 Three - Wheel Tube Cutter.

No. 1. To cut tubes ¼in. to 1in., 12/6 each.

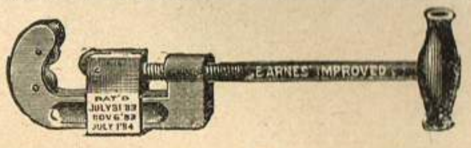
No. 2. Ditto 1in. to 2in., 19/6 each.

No. 3. Ditto 2in. to 3in., 24/6 each.



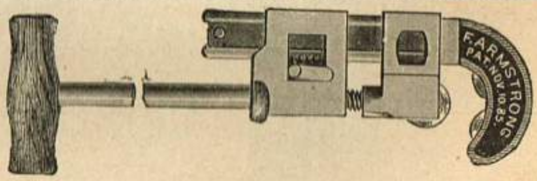
1838 Three-Wheel Tube Cutter.

No. 1. To cut tubes ¼in. to 1in. ... ... 11/- each.
No. 2. " 1¼in. to 2in. ... ... 17/6 "
No. 3. " 2¼in. to 3½in. ... ... 23/6 "
Extra Cutters for any of the above, Nos. 1, 9d. ; 2, 1/-; 3, 1/3 each.



1839 Barnes' Three-Wheel Pipe Cutter.

No. 1. To cut tubes from ⅛in. to 1in., 8/6 each.
No. 2. " " ½in. to 2in., 10/6 "
No. 3. " " 1½in. to 3in., 17/6 "
Cutter Wheels for ditto, Nos. 1, 9d. ; 2, 1/- ; 3, 1/6 each.



1840 Armstrong's Patent Adjustable Three-Wheel Pipe Cutter.

No. 1. To cut tubes from ⅛in. to 1¼in., 11/6 each.
No. 2. " " ½in. to 2½in., 16/- "
No. 3. " " 1½in. to 4in., 40/- "
Cutter Wheels, Nos. 1, 10d. ; 2, 1/1 ; 3, 2/- each.

W. Jones's Patent Pipe-cutter.

1841 A useful labour-saving Tool, of great service to **Gas** and **Water Companies,** Engineers, Ironmongers, Plumbers, and others, who occasionally or frequently fix cast-iron pipes for any purpose. It has the following **Special Advantages**:—

It is suitable for rain water, hot water, or steam pipes.

It can be altered in a few seconds by adding one link and wheel for each size.

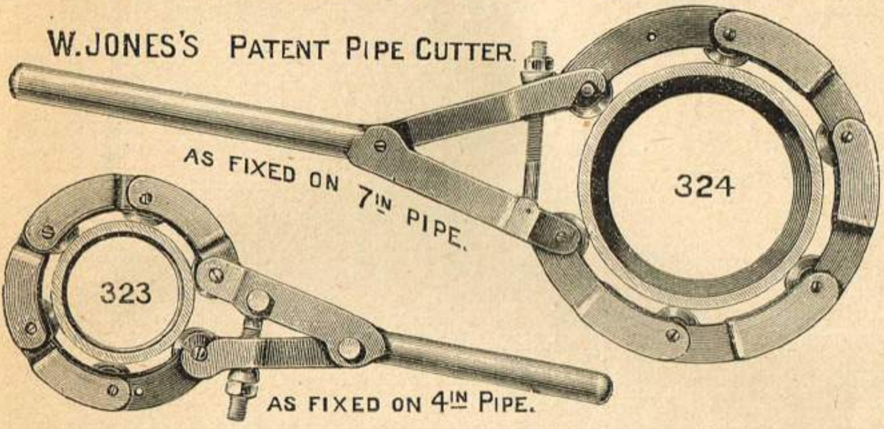
It is capable of adjustment for all sizes of pipes within the range of the Tool.

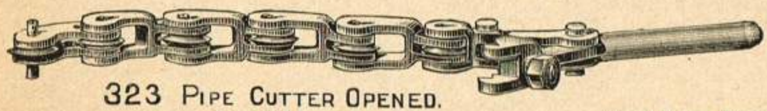
It can be used in confined spaces, such as channels, etc.

It adjusts itself to pipes irregular in shape, *i.e.*, not round.

As it requires only a short stroke before the wheels meet, the pipe is cut truer and with greater certainity.

Approximate time in cutting off pipes 4in. diam. by ¼in. thick, 30 seconds; 4in. diam. by ½in, thick, 3 minutes; 12in. diam. by ⅜in thick, 10 minutes; 24in. diam. by 1in. thick, 30 minutes.


W. JONES'S PATENT PIPE CUTTER.
AS FIXED ON 7IN PIPE.
324
323
AS FIXED ON 4IN PIPE.



323 PIPE CUTTER OPENED.

Any person having No. 323, which cuts 2in. as its smallest size, may now extend its range down to ¾in., by ordering three short links, price **£1 1s.** extra.

The No. 325 Cutter has Two Detachable Levers, which may be fixed at any angle by substituting Link A for any other link. In confined spaces or channels this will save considerable labour in excavating, etc.

Instructions for Using.

1. Pass the Links round the Pipe, and secure with adjusting screw.
2. Move Lever backwards and forwards, and see that the Wheels form an endless track, and not a worm or screw.
3. Tighten the Adjusting Screw, and work Lever, alternately, until Pipe comes off.
4. Oil the Track in which the Wheels run, and also the Steel Pins upon which the Wheels revolve.
5. A loose Pipe may be securely held with Sling Chains passed round Pipe, and secured with Crossed Levers in the form of a Strut.

No. 322.

To Cut Pipes.	No. of Wheels.	PRICE.
¾ to 1in.	3	£0 19 0
¾ to 1½in. ...	4	1 6 0
¾ to 2in.	5	1 13 0
Extra Wheels		1/6 each.

No. 323.

To Cut Pipes.	No. of Wheels.	PRICE.
2 to 3in.	5	£1 12 6
¾ to 3in.	8	2 13 6
2 to 4in.	6	2 0 0
¾ to 4in.	9	3 1 0
2 to 5in.	7	2 7 6
¾ to 5in.	10	3 8 6
2 to 6in.	8	2 15 0
¾ to 6in.	11	3 16 0
2 to 7in.	9	3 2 6
¾ to 7in.	12	4 3 6
2 to 8in.	10	3 10 0
¾ to 8in.	13	4 11 0
Extra Wheels		1/6 each.

No. 324.

To Cut Pipes.	No. of Wheels.	PRICE.
5 to 6in.	5	£2 10 0
5 to 7in.	6	2 19 0
5 to 8in.	7	3 8 0
5 to 10in. ...	8	3 17 0
5 to 11in. ..	9	4 6 0
5 to 13in. ...	10	4 15 0
Extra Wheels		2/3 each.

No. 325.

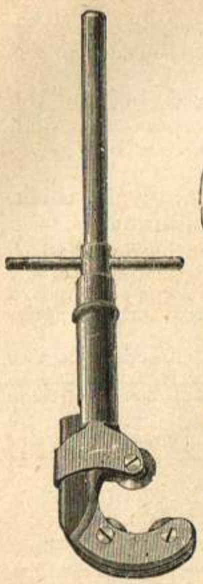
To Cut Pipes.	No. of Wheels.	PRICE.
12 to 14in. ...	9	£7 0 0
12 to 16in. ..	10	7 12 0
12 to 18in. ...	11	8 4 0
12 to 20in. ...	12	8 16 0
12 to 22in. ...	13	9 8 0
12 to 24in. ...	14	10 0 0
Extra Wheels		3/3 each.

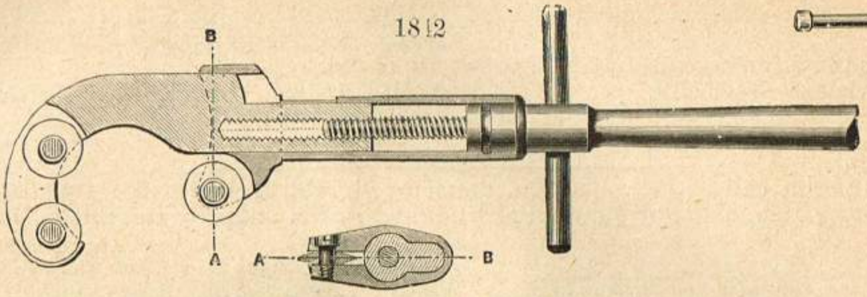
PRINCIPAL CAUSE OF DAMAGE TO PIPE CUTTER WHEELS.

1. The Wheels **forming** a **Worm** on Pipe will **nip** the edges; they **should** all **follow** in one **Track.**
2. **Broken Pieces** should be **immediately removed** from the track, or they will damage the other wheels.
3. **Hard flinty substances** in the Pipe will **break** the edge, or turn it again, sometimes both.
4. **Side Strain** or wriggling of the handle, especially when the wheel is **imbedded** (say ⅛in. deep) in the **Metal.**

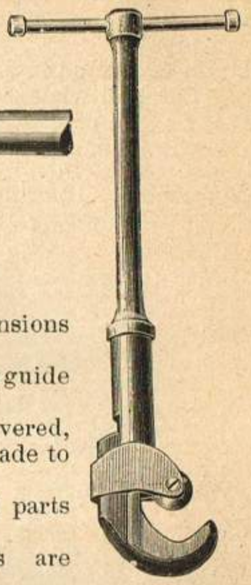
The "Exact" Tube Cutter.

The Tube Cutters are made entirely of the very best forged Swedish steel.





1812



Is light, strong, and of finest shape and finish.

Has no part that soon wears out.

Guides itself accurately, so that the cutting wheels run straight.

The adjusting-screw is completely covered and protected so that it cannot be injured.

Cannot be bent or injured, even when forced to its utmost capacity.

Has sufficiently large dimensions where required.

It has a sleeve which forms a guide opposite the wheels.

The movable wheel is not covered, so that it can easily be made to follow the mark.

Is entirely of steel, and all parts are forged.

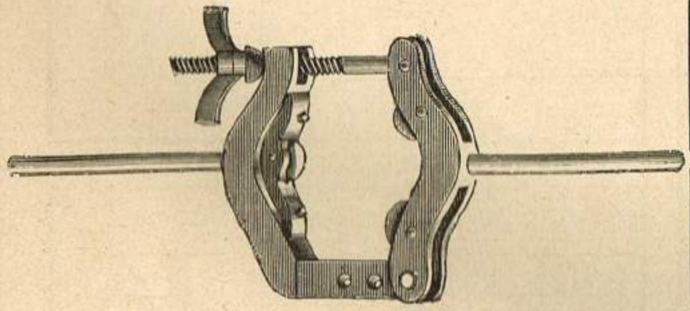
All its wearing surfaces are hardened.

Is cheap for being such a first-class tool.

	No. 1	No. 2
Cutting Tubes	¼in. to 1in.	¾in. to 2in.
With 3 Wheels ... ... Price	13/6	20/- each.
With 1 Wheel ... ... ,,	10/6	15/6 ,,

Tube Cutters.

For Cutting Cast-iron Mains.

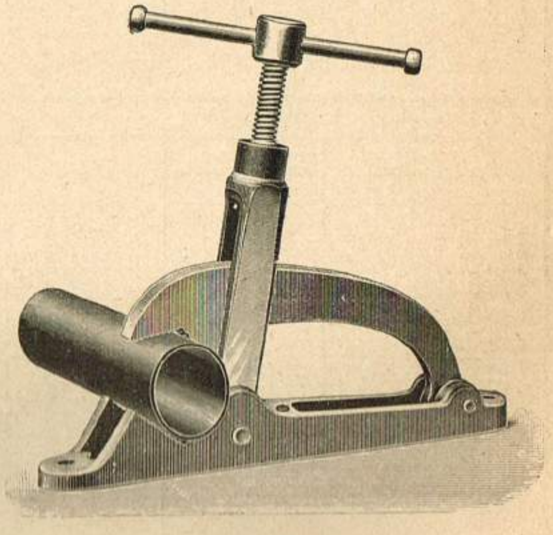


1843

No. 1	To cut from 2in. to 4in. Pipes ...	22/6 each.
No. 2	,, 4in. to 6in. ,, ...	27/6 ,,
No. 3	,, 5in. to 8in. ,, ...	32/6 ,,

Extra Cutters for either size, 1/3 each.

The "Little Samson" Tube Vice.



1844

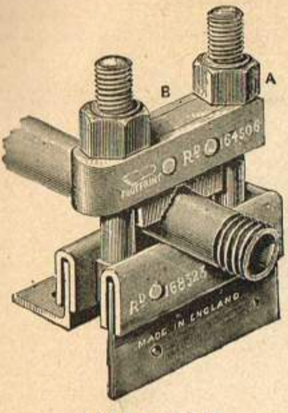
This Vice is made entirely of steel, and is both lighter and stronger than the usual patterns made of cast-iron.

Holds Tubes or Sockets from ¼in. to 2in.

Price, 21/- each.

Tube Vices.

1845 "The Footprint" Tube Vice, as illustration, light, strong, effective, holding tube from ⅛in. to ¾in., price 3/-
1846 Ditto for Tubes from ⅛ in. to 1½in., price 7/6
1847 Ditto for Tubes from ½in. to 3in., price 17/-



1845 to 1847

DIRECTIONS FOR USE.

Loosen the nut A and swing back the jaw B as in figure 2. Lay the tube in the groove C, then swing back the jaw into place, and tighten up the nuts.

When tightening up a tube in this Vice, screw up nut B last, as it causes the Vice to grip better.

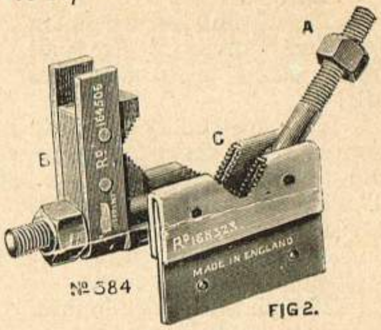
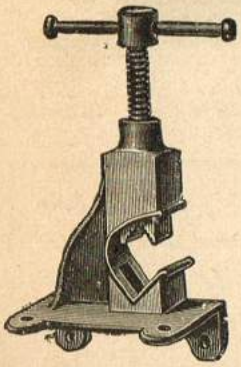


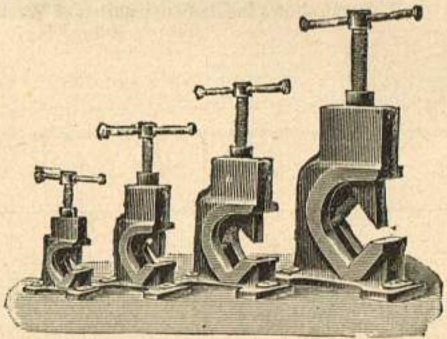
FIG 2.

1845 to 1847

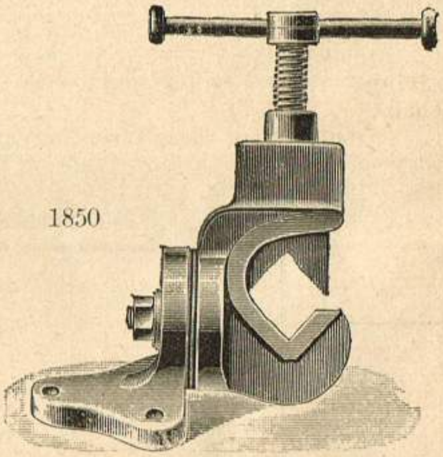
1848



1849



1850



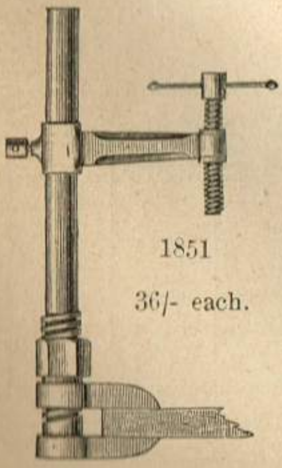
1848 Light Portable Tube Vice, made of Malleable Iron with Steel Screw and Jaws, takes from ⅛in. to 1in., 6/6 each.

1849 Improved Open Jaw Tube Vice, Screws and Jaws are made of Wrought Steel—
No. 1, to take ¼in. to 1in., 8/6. No. 2, ¼in to 2in., 10/6. No. 3, ¼in. to 3in., 14/6. No. 4, 1in. to 4in. 23/-

1850 Adjustable Tube Vices, Screws and Jaws are made of Wrought Steel—
No. 1, to take in ¼in. to 2in., 21/- No. 2, to take in ¼in. to 3in., 29/- No. 3, to take in 1in. to 4in., 40/-

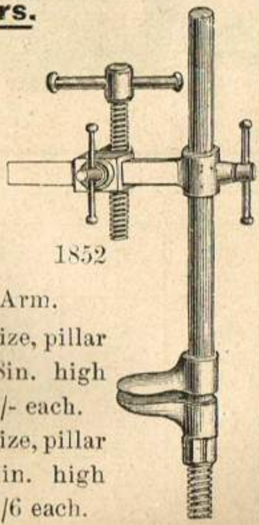
These adjustable Tube Vices are now much used in preference to the ordinary Vices, because they give the workman the advantage of placing the tube in a vertical position, which enables him to cut the thread with greater ease and freedom than the ordinary Vices, which hold the tube in a horizontal position.

Drilling Pillars.



1851

36/- each.



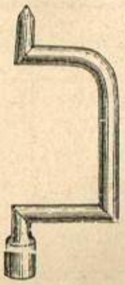
1852

With Slide on Arm.

1851 No. 1 size, pillar 1⅜ dia. by 28in. high from bench, 27/- each.

1852 No. 2 size, pillar 1⅝ dia. by 31in. high from bench, 31/6 each.

Crank Braces.



1853

8/6 each.

1854

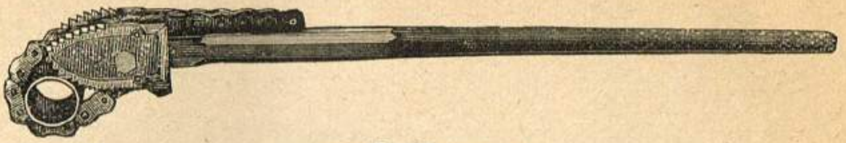
With Screw, 10/6 each.

Drills for ditto, any size from ¼in. to 1¼in., 1/2 each.

"Invicta" Chain Pipe Wrench.

For Gripping, Turning, or Holding Pipe, Bolts, Shafts, or Round Surfaces, from ⅛in. to 14in. in Diameter.

1855

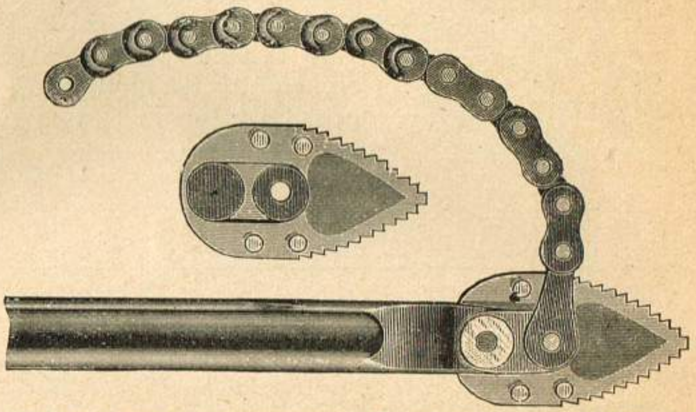


The advantages we claim for the "Invicta" over all other chain pipe wrenches are:—

They are equally proportioned throughout, giving them great strength and durability with the least possible weight. The handle will not bend; the teeth are especially designed for this style of wrench, and great care is taken in tempering them; and the capacity is greater.

The pins or projections on jaws, which the chain hooks on to, are more than strong enough to bear all strain, and the drop-forged hook, which comprises the outside link of chain, is amply strong. The hooking strain of chain is brought to bear on the patent link and not on the rivet, thus giving a strong, positive, and easy-hooking chain.

We guarantee these Wrenches, and if they break, through any fault of workmanship or material, we will replace them with new. The Wrench is easily taken apart by removing the pin, and each part is interchangeable, so that if any part breaks it can be replaced.

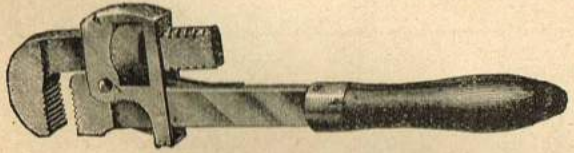


This cut shows inside construction of Wrench, and manner of fastening it together.

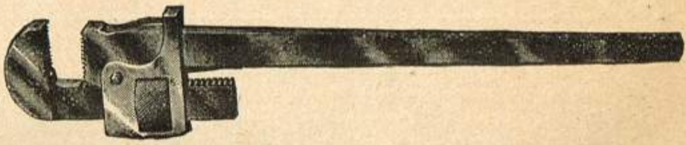
No.	Capacity.	Length.	Weight.	Price, each.	Extra Chains.	Extra Jaws.
0	⅛ to 1in.	12½in.	1¼lb.	£0 7 6	£0 3 0	£0 4 0
1	¼ ,, 2 ,,	19½ ,,	4¼ ,,	0 11 6	0 4 0	0 7 0
2	¼ ,, 3 ,,	28 ,,	8 ,,	0 17 6	0 6 0	0 11 0
3	¾ ,, 6 ,,	38¼ ,,	15 ,,	1 2 6	0 10 0	0 16 0
4	1½ ,, 10 ,,	50½ ,,	28 ,,	1 15 0	0 16 0	1 0 0
5	2 ,, 14 ,,	65 ,,	47 ,,	2 17 6	1 0 0	1 7 6

Stillsons' Patent Pipe Wrenches

Have two separate and distinct "Grips."



1856

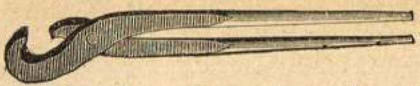


1857

	1856 Polished Wood Handles.					1857 All Steel Handles.			
Length open in inches	6	8	10	14	18	18	24	36	48
Takes from ...	⅛in. wire to ½in. pipe.	⅛in. wire to ¾in. pipe.	⅛in. wire to 1¼in. pipe.	¼in. wire to 1¾in. pipe.	¼in. wire to 2½in. pipe.	¼in. wire to 2in. pipe.	¼in. wire to 3in. pipe.	¼in. wire to 4in. pipe.	1in. wire to 5in. pipe.
Price ... ... each	4/6	5/6	6/-	8/6	11/6	11/6	17/-	33/-	50/-

Pipe Tongs and Wrenches.

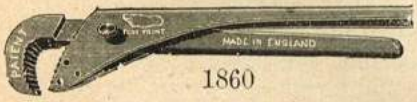
Gas Tongs for Iron Gas Pipe.



		⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3in.
1858	To Take Barrel ...	1/2	1/3	1/6	1/10	2/3	2/6	3/2	4/-	4/9	6/3	6/9 each.
1859	„ Sockets ...	—	—	1/10	2/3	2/6	3/2	4/-	4/6	5/6	6/9	7/6 „

Firm Grip Pipe Wrenches,

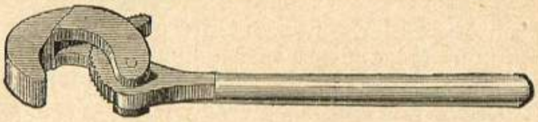
With Broad-faced Hooked Upper Jaws for Pipes.



1860

No. 1.	15in. long, holds pipes ½in. to 1½in., Weight, 3¼lb. ...	5/9 each.
No. 2.	21in. long, holds pipes ¾in. to 2½in., Weight 7½lb.... ...	10/6 „
No. 3.	30in. long, holds pipes 1in. to 3½in. Weight 12lb.... ...	16/6 „

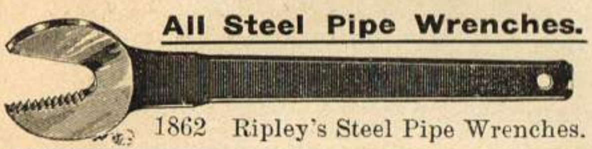
Improved Pipe Wrenches.



1861 Improved Gas Pipe Wrenches to Hold Pipes.

No. 1.	⅛in. to ½in.	3/- each.
No. 2.	¼in. to 1in.	4/6 „
No. 3.	½in. to 1¼in.	6/- „
No. 4.	1in. to 2in.	8/6 „
No. 5.	1¼in. to 2¼in.	12/- „
No. 6.	1½in. to 3in.	16/- „

All Steel Pipe Wrenches.

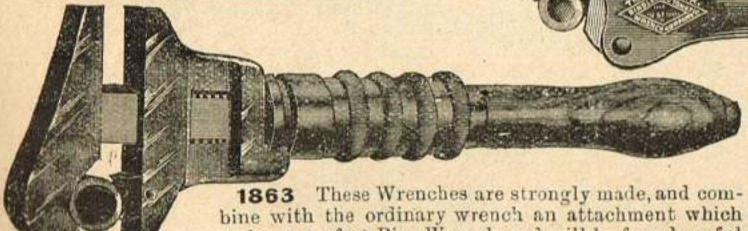


1862 Ripley's Steel Pipe Wrenches.

No. 1.	¼in. to ½in.	2/- each.
No. 2.	½in. to 1in.	4/6 „
No. 3.	1in. to 1½in.	6/6 „
No. 4.	1½in. to 2in.	8/6 „
No. 5.	2in. to 3in.	10/6 „

Bemis & Call Combination Wrench,

With Long Nut.



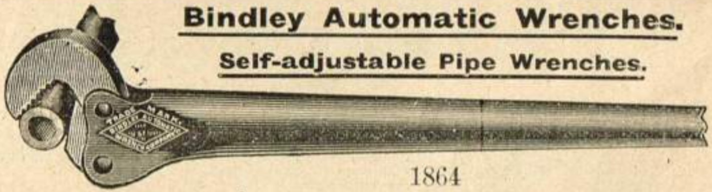
1863 These Wrenches are strongly made, and combine with the ordinary wrench an attachment which makes a perfect Pipe Wrench, and will be found useful by every engineer and mechanic for use on nuts, pipes, rods, etc. The head is steel-faced, and steel jaw, with wrought-iron bar, case-hardened throughout. Parts interchangeable. Finished bright.

PRICES.

10in.,	for Pipes	½in. to 1in.	7/- each.
12in.,	„	½in. „ 1¾in.	8/- „
15in.,	„	½in. „ 2in.	12/- „
18in.,	„	¾in. „ 3in.	18/- „

Bindley Automatic Wrenches.

Self-adjustable Pipe Wrenches.



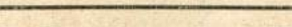
1864

Not only a Pipe Wrench but adapted to all work for which a Wrench is used. All parts made of the best steel. Handles of bicycle tubing. *Will not lock*, and releases grip as soon as pressure is taken off. A light, durable and effective tool.

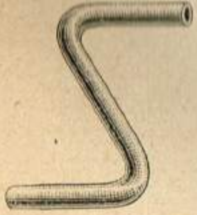
PRICES.

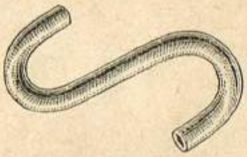
No. 1.	Taking Pipes from ⅜in. to 1in. ...	8/6 each.
No. 2.	Taking Pipes from ¾in. to 2in. ...	12/6 „

Billing's Patent Device for Bending Lead Pipe.



1865





No Plumber can afford to be without it.
Saves ten times its cost every month.

Makes bends any shape in a moment.
Without Kinking, Flattening, or Marking in any way.

Two specimens of Pipes bent with this Tool are here shown.

DIRECTIONS FOR USE.

Drive the Plug provided through the pipe to take out any irregularities, should there be any, then put a few drops of oil on the spring, place it inside the pipe and bend to the desired shape.

It is as easy to form opposite or double curves, such as goose-necks, as a single bend.

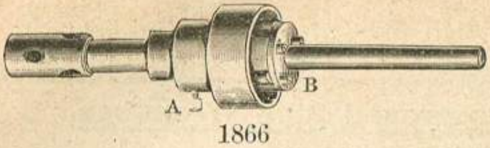
To remove the Bender from the pipe, after the bend is made, bend back a trifle on each bend, then turn the Bender to the right (which decreases its size) and pull at the same time.

Every Bender is warranted if directions are followed.

Size	1	1¼	1½	2	2½	3	3½	4in.
Price	2/6	3/-	4/6	5/6	9/-	12/-	17/6	20/- each.

Dudgeon's Pattern Roller Tube Expanders.

With Spare Rollers and Tommie to each.



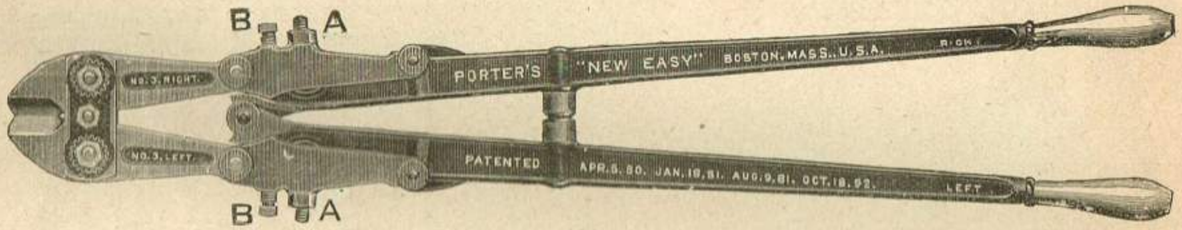
1866

By means of these Expanders the tubes can be expanded without striking a blow on them, thus rendering them far less liable to crack. Leaky ones can be tightened, with steam on the boiler, with perfect safety. One Expander will answer for any thickness of tube sheet, by simply shifting the position of the outside ring **A**, thus avoiding the necessity of an Expander for each different thickness of sheet. They are no more liable to break than the common tool, and are much more easily kept in order, as the rollers are the only things that can give out, and they can be replaced in a few moments by unscrewing the cap **B**.

DIRECTIONS FOR USE.—Put the Expander in the tube; then put in the mandrel, driving it up with a *mallet*, and by turning on the wrench or pin until the Expander has made three or four revolutions, the tube will be sufficiently expanded. To draw out the mandrel, shake it, striking on the back or inner side of the wrench. If thought necessary to overset the end of the tube more than is done by the Expander, then it should be done before expanding the tubes, as they should not be hammered on afterwards. The tube-plate should not be countersunk. Before using the tool, oil the rollers and mandrel. *Do not strike on the sides of the mandrel to draw it out, as it is very destructive to the tool.*

Diameter, External	1	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2in.	
Prices	15/-	15/-	15/-	15/-	17/6	18/6	18/6	20/-	each.
Diameter, External	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$	3	$3\frac{1}{8}$	$3\frac{1}{4}$in.	
Prices	£1 1 6	£1 4 0	£1 7 0	£1 10 0	£1 12 0	£1 16 0	£2 0 0	£2 0 0	„
Diameter, External	$3\frac{1}{2}$	$3\frac{5}{8}$	$3\frac{3}{4}$	4	$4\frac{1}{4}$	$4\frac{1}{2}$	5	6in.	
Prices	£2 5 0	£2 10 0	£2 10 0	£2 14 0	£3 3 0	£3 3 0	£4 0 0	£4 5 0	„

The "Invicta" Bolt Croppers.

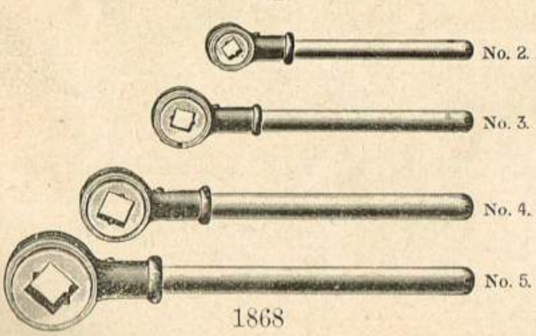


1867

These Bolt Croppers are the only open shear Croppers having sufficient adjustment to take up the wear of the joints and the cutting edges during years of use. The jaws work on steel bolts, which are fastened in the bottom strap, whilst the lock nuts are locked by the lock plate. The jaws can easily be adjusted to a nicety.

No. 0.	For $\frac{5}{16}$in. Bolts,	18in. long;	weight, 3lb.	...	Price, 12/6 each.	Extra Jaws, 6/6 per pair.
„ 1.	„ $\frac{3}{8}$in.	„ 24in. „	„ $4\frac{1}{4}$lb.	...	„ 15/6 „	„ 8/6 „
„ 2.	„ $\frac{1}{2}$in.	„ 30in. „	„ $7\frac{1}{2}$lb.	...	„ 21/- „	„ 10/6 „
„ 3.	„ $\frac{5}{8}$in.	„ 36in. „	„ $11\frac{1}{2}$lb.	...	„ 28/6 „	„ 15/- „

"Little Giant" Ratchet Nut Wrenches.



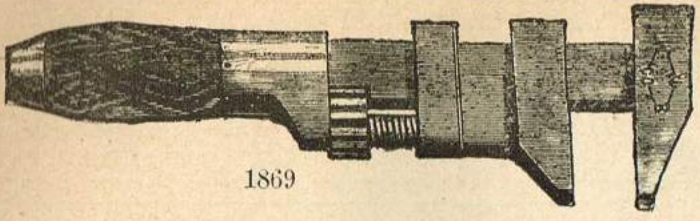
1868

LIST OF LENGTHS, SIZES, AND PRICES.

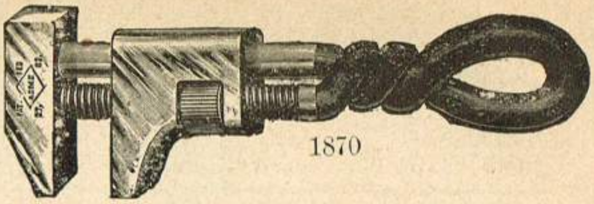
NUMBER OF WRENCH.	SIZE OF NUT.	WHOLE LENGTH.	PRICE.
No. 1	$\frac{3}{16}$ and $\frac{1}{4}$in.	7in.	3/-
No. 2	$\frac{5}{16}$ „ $\frac{3}{8}$in.	8in.	4/-
No. 3	$\frac{7}{16}$ „ $\frac{1}{2}$in.	10in.	5/-
No. 4	$\frac{5}{8}$ „ $\frac{3}{4}$in.	13in.	8/-
No. 5	$\frac{7}{8}$ „ 1in.	16in.	12/-

For the use of blacksmiths and carriage makers, for the removal of nuts, this tool will be found a most convenient one. It is complete in itself. Is strong and thoroughly made. When ordering, give number of the wrench wanted.

Coach and Other Wrenches.

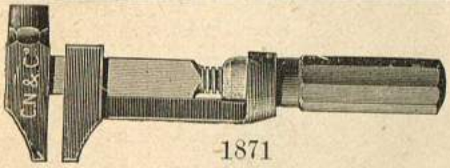


1869

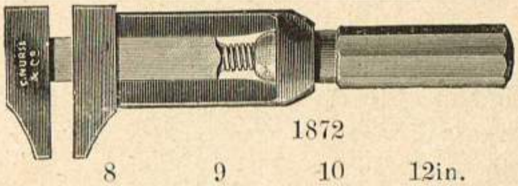


1870

		6	8	10	12	15in.
1869	Wood Handled American	1/-	1/3	1/6	2/-	— each.
1870	Improved "Acme" All Steel Wrench ...	2/-	2/6	3/3	3/9	5/6 „



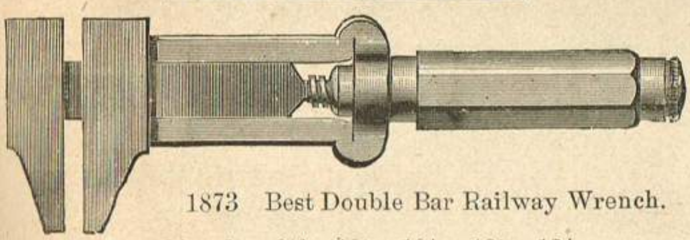
1871



1872

		8	9	10	12in.
1871	Single Bar Wrench	3/-	3/6	4/-	5/- each.
1872	Double Bar ditto	4/9	5/-	5/6	6/6 „

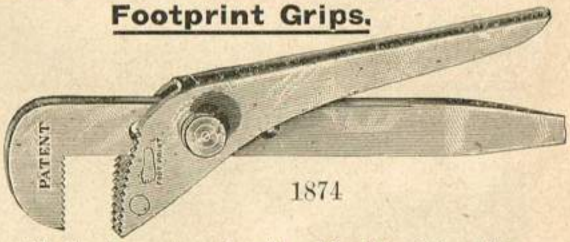
Best Railway Wrench.



1873 Best Double Bar Railway Wrench.

8in. 9/- ; 9in. 9/6 ; 10in. 10/- ; 12in. 12/-

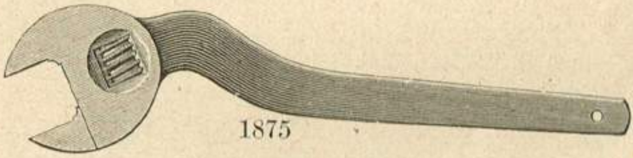
Footprint Grips.



1874

All Steel ...	6	7	9	12	14	16	21in.
Black Finish	1/-	1/6	2/-	3/3	4/-	6/6	8/6 each.

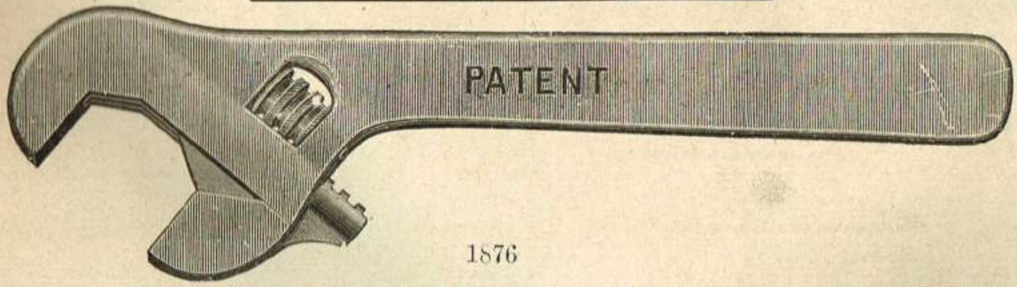
Improved Clyburn Spanners.



1875

Length	6	8	10	12	15	18	21	24	26in.
Span	⅝	¾	1	1¼	1½	1¾	2	2¼	2½in.
Price	3/3	3/9	4/6	5/6	6/6	7/6	8/6	10/6	13/- each.

The "Swedish" Spanner.

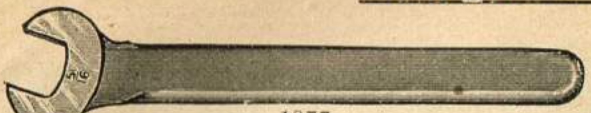


1876

These Spanners are made in Sweden, of the very best Swedish steel. Whilst light, handy, and adjustable, they are equal in strength and durability to solid Spanners.

No....	1	2	3	4
Takes in	¾	1	1½	1¾in.
Length	6½	9	12	15in.
Price	4/-	5/-	6/6	8/- each.

Wrought Steel Spanners.

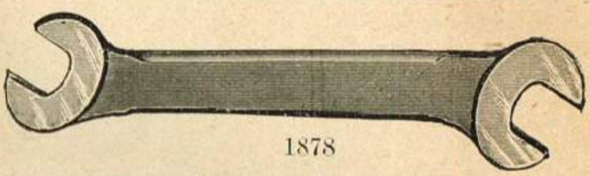


1877

Wrought Steel Single-ended Spanners (to fit Whitworth's Standard Nuts), filed all over and case-hardened, with bright jaws, and sizes marked on.

Length ...	5	5	6	7	9	11	13	15	17	19	21	23	25	27	29	31	33in.
Size of Nut	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2in.
Price ...	6d.	7d.	9d.	11d.	1/-	1/3	2/-	2/3	2/9	3/-	3/6	4/3	4/9	5/6	6/6	7/6	8/-

Wrought Steel Double-ended Spanners (to fit Whitworth's Standard Nuts), filed all over and case-hardened, with bright jaws, and sizes marked on.



1878

Length ...	6	6	$7\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{1}{2}$	$8\frac{1}{2}$	10	12	$13\frac{1}{2}$	15in.
Size of Nut	$\frac{1}{4}$ by $\frac{5}{16}$	$\frac{1}{4}$ by $\frac{3}{8}$	$\frac{5}{16}$ by $\frac{3}{8}$	$\frac{5}{16}$ by $\frac{7}{16}$	$\frac{3}{8}$ by $\frac{7}{16}$	$\frac{3}{8}$ by $\frac{1}{2}$	$\frac{7}{16}$ by $\frac{1}{2}$	$\frac{1}{2}$ by $\frac{5}{8}$	$\frac{5}{8}$ by $\frac{3}{4}$	$\frac{3}{4}$ by $\frac{7}{8}$in.
Price ...	9d.	9d.	1/-	1/-	1/2	1/2	1/4	1/9	2/3	2/9

Length ...	16	18	20	22	24	26	28	30	32in.
Size of Nut	$\frac{7}{8}$ by 1	1 by $1\frac{1}{8}$	$1\frac{1}{8}$ by $1\frac{1}{4}$	$1\frac{1}{4}$ by $1\frac{3}{8}$	$1\frac{3}{8}$ by $1\frac{1}{2}$	$1\frac{1}{2}$ by $1\frac{5}{8}$	$1\frac{5}{8}$ by $1\frac{3}{4}$	$1\frac{3}{4}$ by $1\frac{7}{8}$	$1\frac{7}{8}$ by 2in.
Price ...	3/6	4/-	5/-	5/6	6/6	7/6	8/6	9/6	10/6

The following Table gives Whitworth's Standard Nut Sizes:

Nut Size	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2in.
Span ...	$\frac{1}{2}$F	$\frac{5}{8}$B	$\frac{11}{16}$F	$\frac{13}{16}$	$\frac{15}{16}$B	1	$1\frac{1}{8}$B	$1\frac{5}{16}$	$1\frac{1}{2}$B	$1\frac{11}{16}$B	$1\frac{7}{8}$	$2\frac{1}{16}$B	$2\frac{1}{4}$B	$2\frac{7}{16}$B	$2\frac{9}{16}$	$2\frac{3}{4}$	3F	$3\frac{1}{8}$Fin.

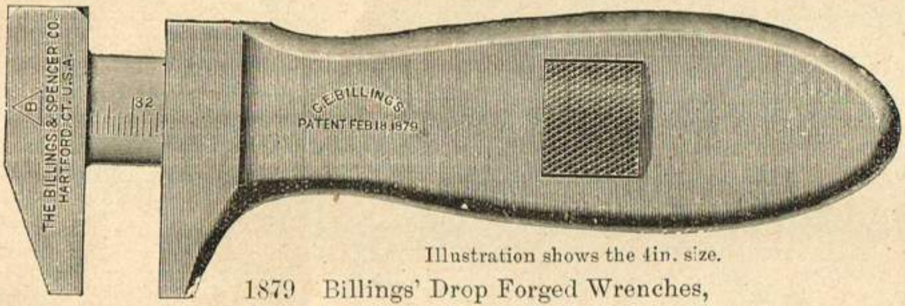
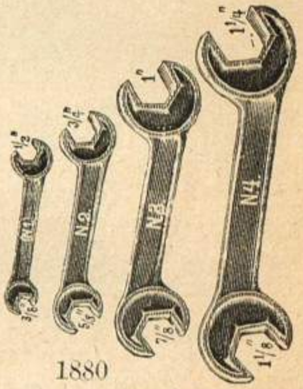

THE BILLINGS & SPENCER CO. HARTFORD, CT. U.S.A.
B
32
C.E.BILLINGS
PATENT FEB 18 1879

Illustration shows the 4in. size.

1879 Billings' Drop Forged Wrenches,

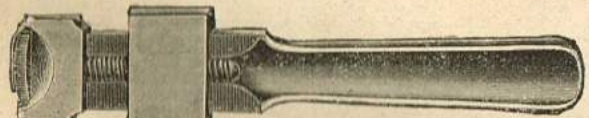
4in. opens 1in.,	weight 7oz.,	black 2/6,	plated 3/-
5in. „ $1\frac{1}{2}$in.,	„ 11oz.,	„ 3/6,	„ 4/-
6in. „ $1\frac{3}{4}$in.,	„ 19oz.,	„ 4/-,	„ 5/-



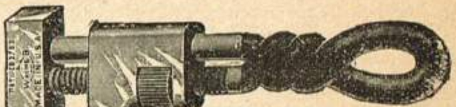
1880

Set of 4 Malleable Steel Spanners, 1/6 per set.

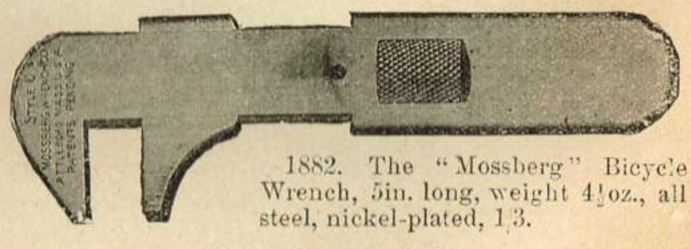
Bicycle Spanners.



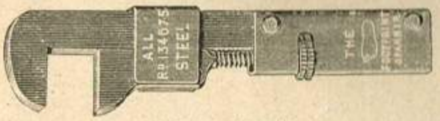
1881 Length 6in.
"New Century." Patented.
Warranted wrought steel. 2/- each.



1883


STYLE C
MOSSBERG WRENCH CO.
ATTLEBORO MASS U.S.A.
PATENTS PENDING

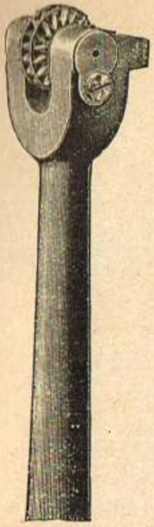
1882. The "Mossberg" Bicycle Wrench, 5in. long, weight $4\frac{1}{2}$oz., all steel, nickel-plated, 1/3.

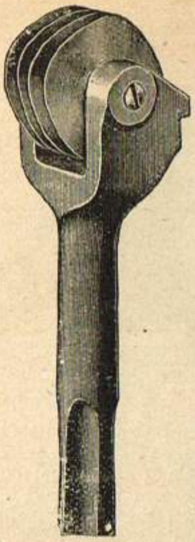


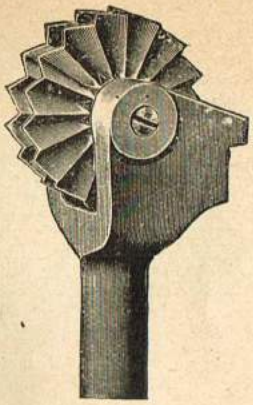
1885 & 1886

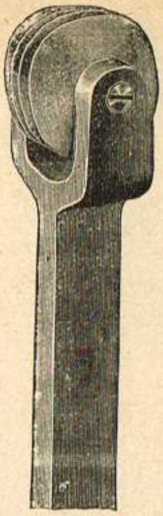
1883 The "Little Wonder" Bicycle Wrench, very strong, very light, 5in., bright, 1/-.
1884 „ „ „ „ nickel-plated, 1/3.
1885 The "Footprint" Wrought Steel Cycle Spanner, for nuts up to $1\frac{1}{8}$in., weight 8oz., black 2/-.
1886 „ „ „ „ „ „ „ „ bright 2/6.

Emery-wheel Dressers.


"HUNTINGTON."


No. 1.


No. 3.


No. 5.

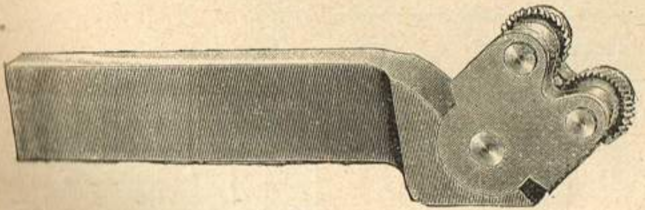
1887 No. 2 is same as No. 1, except that the Cutters and Handle are larger.

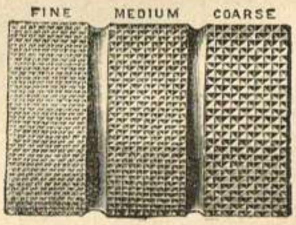
The "Huntington."

Tools for Trueing and Dressing Emery-wheels should be kept constantly at hand ready for use, as it is of the utmost importance that wheels should be kept perfectly true. A variety of styles, both in size and shape of cutters, are desirable for wheels of different coarseness, hardness, and size. We recommend our large Corrugated and Twisted Cutter Dressers for the larger and coarser wheels; our small Twisted Cutter Dresser, or the "Huntington" for smaller and finer wheels.

No. 1 Dresser—Small Twisted Cutters...	... 3/-	"Huntington" Dresser	... 4/-
,, 2 ,, Large ,, ,, ...	... 4/-	,, Cutters, per set... ...	... 1/-
,, 3 ,, Corrugated Cutters, 2 in a set...	4/6	Extra Cutters for No. 1 Dresser, per set	... 9d.
,, 5 ,, Lathe Tool, with Twisted		,, ,, No. 2 Dresser, per set	... 1/-
Cutters	... 4/6	,, ,, No. 3 Dresser, per set	... 1/-

Pratt and Whitney Co.'s Knurling Tools.

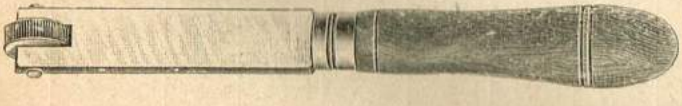


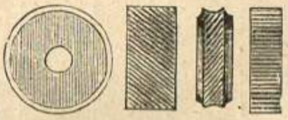


1888 This Tool is designed for checking cylindrical pieces that they may be held firmly by hand. Any desired length and diameter can be checked after the manner of turning in an engine lathe with continuous feed. The holder is jointed, that the knurls may centre themselves. Knurls of three pitches are carried in stock. The pitch of the knurled nut is about 20 to the inch for fine knurls, 12 for medium, and 8 for coarse.

Price of Holder, with one pair of Knurls, 22/6. Extra Knurls, 3/6 per pair.

Milling Tools.

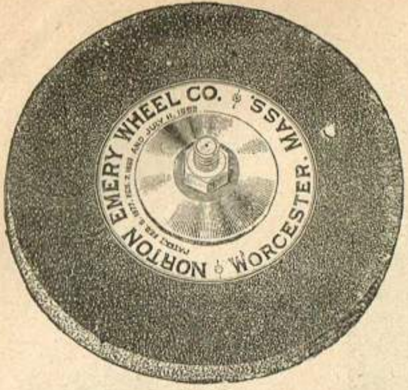
1889



1890

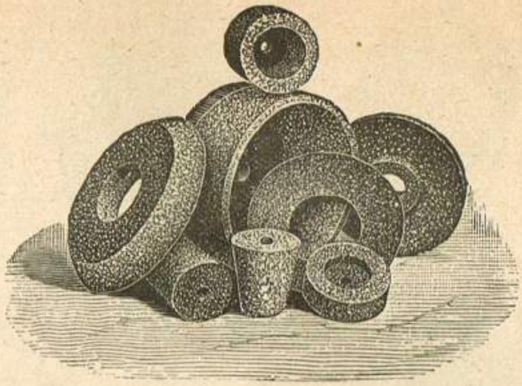
1889	Milling Tools, with Cocobola Handles	1/6 each.
1890	Milling Wheels only	To $\frac{3}{16}$in., 10d.; $\frac{1}{4}$in., 1/-; $\frac{5}{16}$in., 1/6 ,,

Assorted simple patterns. Special patterns made to order.

Emery Wheels.



1891



1892

3in. Dish Wheels.

In these Wheels only pure emery and corundum are used, and the method of manufacture possesses the following advantages :

The Wheels being put together without pressure, their texture is porous and open, ensuring the freest cutting properties. The bond which holds the Wheel together has abrasive properties, so that every particle of the wheel cuts, and there is no waste material to clog or interfere with its work.

They are waterproof, having passed through a white heat to vitrify the bond, and they are therefore not affected by water, oils, or other liquids.

Too great a variety of work should not be expected of one grade of Wheel, and where the amount of grinding will warrant it, several grades can be profitably employed, each carefully selected for its particular purpose.

A Wheel should be kept perfectly true and in balance to obtain the best results, both as regards rapidity and accuracy in grinding, so that it is necessary, for the sake of economy, that a dresser be kept constantly at hand to dress up the Wheels a little each day, and not allow them to become in the least out of true.

The speed at which the Wheels should run to produce the best results depends largely upon the nature of the work and the nature of the Wheel, as the grade will work differently at different speeds. If the Wheels glaze, it is a sure indication that the grade is too hard for the speed, which should be reduced to a point where they do not glaze, when entire satisfaction will result.

Grade List.

A—Extremely Soft.
B
C
D
E—Soft.
F
G
H
I—Medium Soft.
J
K
L
M—Medium.
N
O
P
Q—Medium Hard.
R
S
T
U—Hard.
V
W
X
Y—Extremely Hard.
Z

The intermediate letters between those designated as Soft, Medium Soft, etc., indicate so many degrees harder or softer ; *e.g.*, **L** is one grade or degree softer than Medium ; **O**, two degrees harder than Medium, but not quite Medium Hard.

Wheels should be hung with flanges slightly concaved, of good size, using rubber or leather washers. Great care should be taken to keep the Wheels perfectly true, and in mounting they should slip easily on the mandril, and have flanges screwed only tight enough to prevent slipping.

Price List.

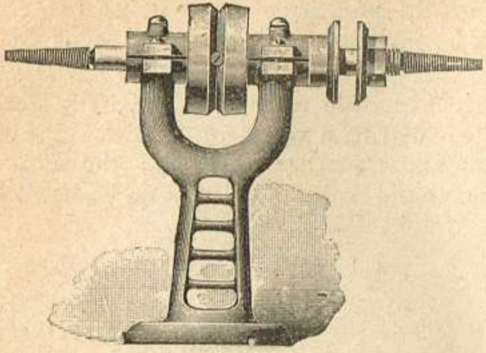
Diameter in Inches.	Thickness of Wheels, in Inches.												Revolutions per Minute.	
	¼	½	¾	1	1¼	1½	1¾	2	2½	3	3½	4	Minimum.	Maximum.
1	/7	/8	/9	/10	/11	1/1	1/2	1/3	1/6	1/8	1/11	2/1	13,000	18,000
1½	/8	/10	/11	1/1	1/2	1/3	1/4	1/6	1/8	1/11	2/1	2/4	10,500	14,000
2	/10	1/1	1/2	1/3	1/4	1/6	1/7	1/8	1/11	2/1	2/4	2/6	7,900	11,000
2½	/11	1/4	1/7	1/9	2/-	2/3	2/5	2/7	3/-	3/5	3/10	4/3	6,330	8,800
3	1/1	1/8	2/-	2/4	2/7	2/11	3/3	3/7	4/2	4/10	5/5	6/3	5,275	7,400
4	1/7	2/4	2/10	3/4	3/10	4/5	4/11	5/5	6/6	7/6	8/7	9/7	3,950	5,500
5	2/1	2/11	3/9	4/7	5/5	6/3	7/1	7/11	9/7	11/3	12/11	14/7	3,160	4,400
6	2/11	3/8	5/-	6/4	7/9	9/1	10/5	11/9	14/6	17/2	19/11	22/7	2,640	3,700
8	4/5	5/5	7/6	9/7	11/8	13/9	15/10	17/11	22/1	26/3	30/5	34/7	1,980	2,770
10	6/3	7/7	10/5	13/3	16/1	18/10	21/8	24/6	30/1	35/9	41/4	47/-	1,580	2,210
12	7/6	8/6	12/6	15/6	18/9	22/3	26/6	29/3	36/3	43/3	50/6	57/3	1,320	1,850
14	—	13/-	17/6	22/3	26/9	31/3	36/-	40/6	49/9	58/9	68/-	77/3	1,130	1,580
16	—	—	22/6	28/6	34/6	40/6	46/6	52/3	64/3	76/-	88/-	99/6	990	1,380
18	—	—	27/6	35/6	43/3	51/-	58/9	66/9	82/3	98/-	113/6	129/3	880	1,230
20	—	—	—	42/3	51/6	61/-	70/6	79/9	98/6	117/3	136/-	154/9	790	1,100
22	—	—	—	52/-	64/6	77/-	89/6	102/-	127/-	152/-	177/-	202/-	720	1,000
24	—	—	—	60/6	75/-	89/6	104/3	118/9	148/-	177/-	206/3	235/6	660	920

1892 The "Richardson" Emery Dish Wheels, 3in. ... ... 1/6 each.

These Wheels are specially made for grinding all kinds of Milling Cutters, especially those of the formed tooth variety.

Grinding and Polishing Machinery.

Polishing Head.

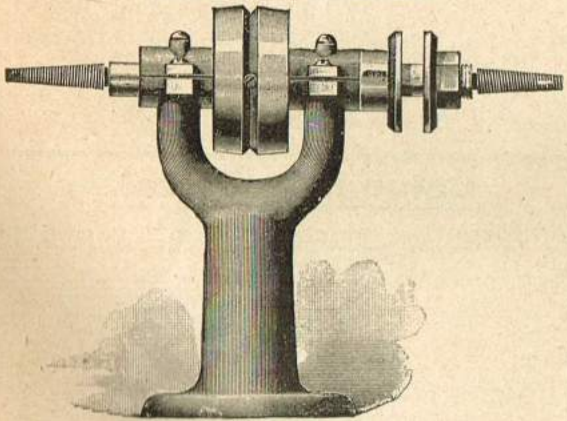


1893

In the construction of this little Machine, as in those of similar style described on this same page, it has been our endeavour to carry out as far as possible the ideas of various users of this class of tools, and they have been constructed with the view of being sold at a moderate price, and at the same time embodying good value.

It has a Solid Iron Frame 6in. in height; Steel Spindle $\frac{3}{8}$in. in diameter, and 8in. long. The Boxes are adjustable; Screws and Caps are of brass; and it is finished in japan. The Taper Screws on each end are carefully threaded. The distance between the flanges admit of placing therein a wheel $\frac{3}{4}$in. in thickness. The pulley is grooved for a $\frac{1}{4}$in. round belt; and is $1\frac{7}{8}$in. in diameter. Price 5/- each. Weight $2\frac{1}{2}$lb.

Polishing Head.



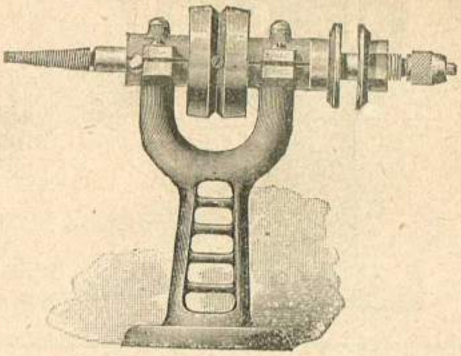
1895

This Polishing Head, while constructed similar to those shown above, is more solid, consequently heavier, and will undoubtedly give better satisfaction for continued use.

It is slightly more than 6in. in height, and is fitted with a $\frac{1}{2}$in. Spindle, 10in. in length. The Boxes are adjustable; Screws and Caps are of brass. The distance between the flanges admit of taking in a wheel $\frac{7}{8}$in. thick. The Taper Threads upon each end are carefully cut. The diameter of the pulley is $2\frac{1}{4}$in., and it is grooved to take a $\frac{1}{4}$in. round belt.

This will be found to be a very solid and substantial little Polishing Head. We recommend it for general use. Price 8/6 each. Weight 4lb.

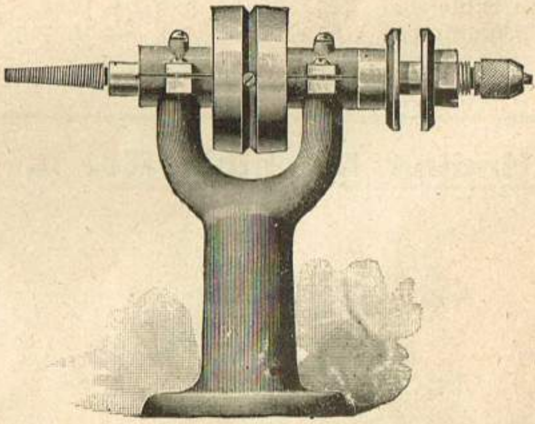
Polishing Head.



1894

This Polishing Head will be found to be identical with No. 1893, except that this one is fitted with a Three-jawed Chuck; capacity, 0 to $\frac{5}{32}$in. This desirable feature will commend itself to all users of these tools, as their ability to do drilling adds materially to their usefulness. Price 8/6 each. Weight $2\frac{1}{2}$lb.

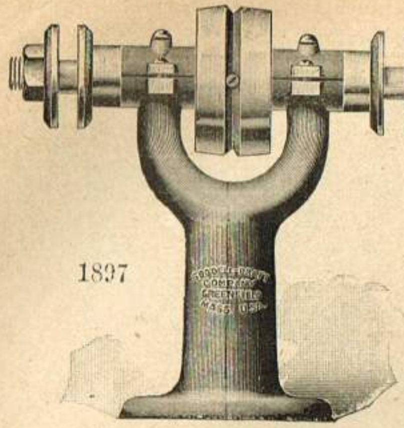
Polishing Head.



1896

This Polishing Head is identical with No. 1895, except that it is fitted with a Three-jawed Chuck; capacity, 0 to $\frac{1}{4}$in. This desirable feature will commend itself to all users of these tools as their ability to do drilling adds materially to their usefulness. This Chuck, holding up to $\frac{1}{4}$in., will at once be appreciated. Price 14/6 each. Weight 4lb.

Grinding Head, No. 25.


GOODELL-PRATT COMPANY GREENFIELD MASS. U.S.A.

1897

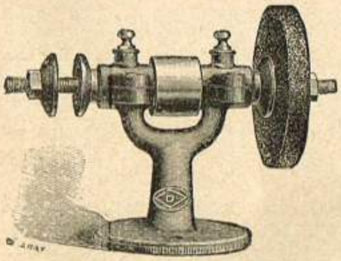
This Grinding Head is quite similar to the Polishing Heads described on the preceding page; it has two sets of flanges for wheels, however, and the Taper Threaded Spindle is omitted.

The machine is a little more than 6in. in height and has a ½in. Spindle; will take wheels ⅞in. thick. Boxes are adjustable, Screws and Caps are of Brass; the Pulley is grooved for a ¼in. round belt; flat belt can be used, however, if desired. Weight 4lb.

Price 12/6 each.

We can also supply this Grinding Head complete with two 4in. Emery Wheels for 17/-

Grinding Machine, No. 1.



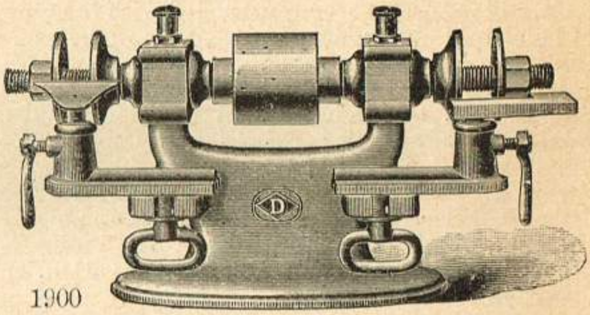
1898

Runs Wheels 6in. diameter.
Size of Arbour between Flanges, ½in.
Weight, 10lb.

	£	s.	d.	
Price	1	5	0	each.
,, Countershaft	2	10	0	,,
,, Column and Water Pot ...	2	2	0	,,

Prices do not include Wheels.

Grinding Machine, No. 3.



1900

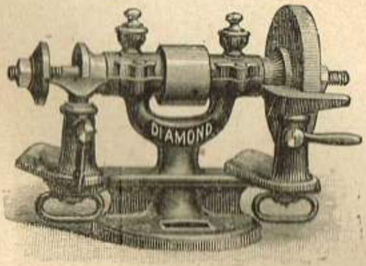
Runs Wheels 10in. diameter.

Size of Arbour between Flanges, ¾in.
Weight, 36lb.

	£	s.	d.	
Price	3	7	6	each.
,, Countershaft	2	10	0	,,
,, Column and Water Pot ...	2	10	0	,,

Prices do not include Wheels.

Grinding Machine, No. 2.



1899

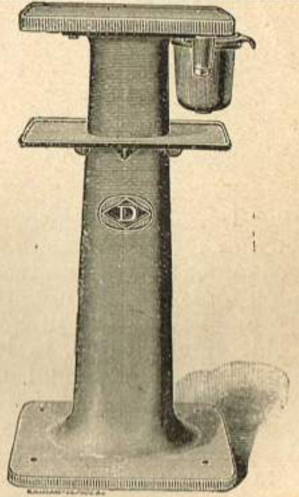
Runs Wheels 6in. diameter.
Size of Arbour between Flanges, ½in.
Weight 16lb.
PRICE.

	£	s.	d.	
With Pulley, as shown	1	16	0	each.
With Tight and Loose Pulleys ...	2	10	0	,,
Countershaft	2	10	0	,,
Column and Water Pot	2	2	0	,,

Prices do not include Wheels.

Column Pedestal.

For Mounting Machines Nos. 1, 2, and 3.



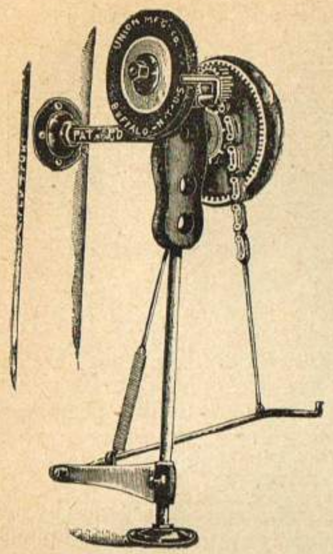
1901

Height of Column, 30in.; Size of Base, 16in. by 13in.; Size of Top, 16in. by 10in. Weight, 125lb.

Price, with Water Pot £2 2 0

Union Tool Grinding and Polishing Machines.

For Light Grinding.


UNION MFG. CO.
BUFFALO, N.Y. U.S.
PAT'D

1902 No. 1.

This Machine is designed for neatness and simplicity, being all connected ready to screw to the wall and floor. Just the thing for Bicycle Shops, small Machine, Jewellery, Carpenter, Butcher and Harness Shops, Mills, Farmers, and in fact any place where knives, scissors, tools, or any light grinding is required.

Stands 42in. high, has ⅝in. Steel Shaft, furnished with 6in. diameter by ¾in. Emery Wheel. Buffing and Polishing can also be done, as a speed of 2,000 and upwards is attained.

Price ... ... 25/- each.

Made Mechanically Correct.

Fine Cut Gear Driven.

No Belts to Slip. Steel Shaft.

Easy to Run.

Will Last a Lifetime.

New Positive Ball Clutch.

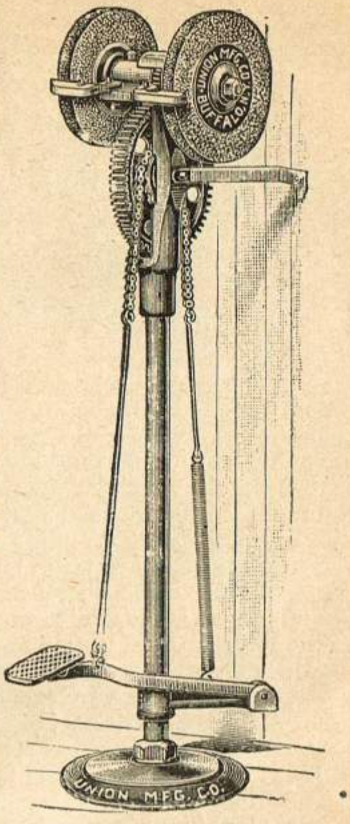
No Spring.

Cone Bearings Large and Well Fitted.

Every Machine Warranted.

The No. 2 Union Grinder, as shown in the adjoining cut, differs materially from the No. 1, in that it is designed for shop use where a variety of grinding is required. The machine is of heavy construction, with heavy machine-cut gears; a third gear being inserted to overcome the direct vibration in the gear. The machine is also provided with cone bearings, a positive ball clutch without springs, is self oiling, and has a heavy standard and a large floor base, and also a flat foot treadle; a speed of 2,000 revolutions and upwards can be easily obtained, the machine being fitted with two high grade emery wheels, 6in. by ¾in., one coarse, one fine. This Grinder is specially recommended for use in cycle and metal workers' shops, where they require to do heavy grinding.

Price ... ... 40/- each.



1903 No. 2.

Union Tool Grinder, No. 3.

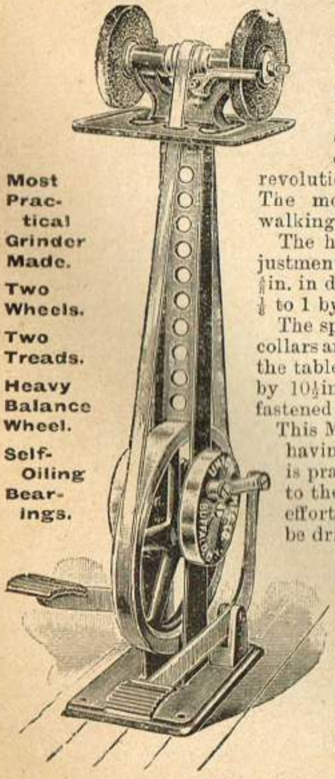
Most Practical Grinder Made.

Two Wheels.

Two Treads.

Heavy Balance Wheel.

Self-Oiling Bearings.



This Machine is constructed on an entirely different principle from No. 1 and No. 2 Grinders.

The power is attained through the medium of the heavy balance wheel driven by our speed motor connected on each side of the column, giving the drive-wheel a revolution of three to one of the tread. The movement of the tread being a walking motion is very easy to operate.

The head is finely fitted, and has adjustments for all wear; has steel shaft ⅝in. in diameter, will carry wheels from ⅛ to 1 by 7in. in diameter.

The spindle has both ends fitted with collars and nuts, with self-oiling bearings; the table is iron with grooved edge, 9¼ by 10½in.; the column is a solid casting, fastened to base; size 7¼ by 11in.

This Machine we recommend to parties having a great deal of grinding, as it is practical to grind from a crowbar to the finest tool with slightly more effort than a power machine; it may be driven by power also.

For Skate grinding, and any work requiring a smooth steady motion, this machine will be found a very satisfactory tool. It is also well adapted for polishing and buffing.

We furnish these machines with one Emery Wheel, 6in. by ¾in. Weight complete, 90lb., stands 40in. high.

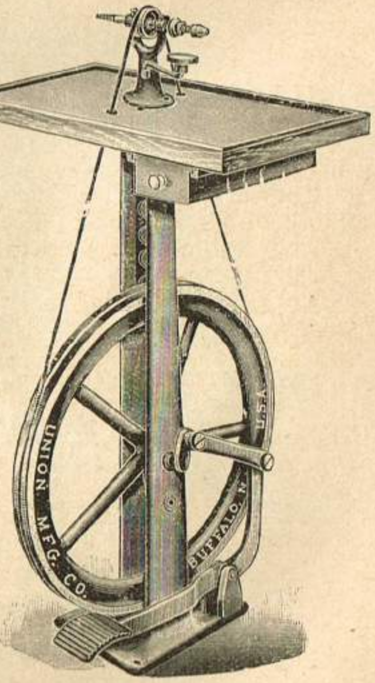
1904 Price 80/- each.

Dental and Jewellers' Lathe.

Well Made!

Neat Design!

All Complete!


UNION MFG. CO.
BUFFALO, N.Y.
U.S.A.

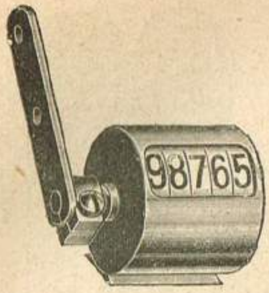
This Machine has our improved tread with speed motor, driving the large balance wheel three to one.

The head is finely fitted, and has adjustments for all wear; the spindle has a standard taper screw for brushes, etc., the other end has parting nuts for large wheels, and split chuck for pin chucks, on which corundum wheels, drills, and tools may be mounted.

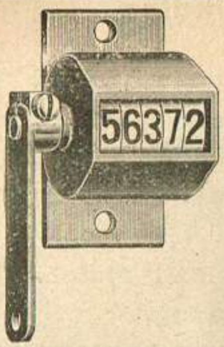
This machine will be found convenient, as it is portable; weight complete, 70lb.

1905 No. 4. ... ... Price 70/- each.

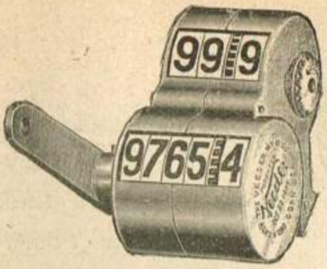
"Veeder" Counters (Ratchet and Revolving).



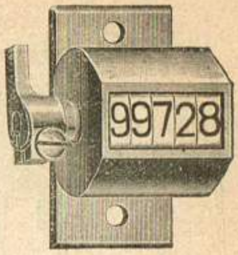
1906 No. 1 Ratchet.



1907 No. 2 Ratchet.



1908 No. 3 Double Ratchet.



1909 No. 4 Revolving.

These Counters are well made, durable and strong, and can be run at a high speed without skipping. They will be found of the greatest use attached to printing presses, looms, punch presses, and automatic machines of various kinds to register the number of pieces or quantity of material produced. They can also be employed in connection with typewriters, and for many other purposes for which a small and accurate automatic recorder is required. Nos. 1 and 2 Ratchet Counters differ only in the method of attachment. The No. 1 has a gib on the body, as shown, and an adjustable bracket into which the gib fits. No. 2 has a flange $1\frac{1}{4}$in. wide with holes by means of which it can be screwed direct to the place where it is required. These Counters register up to 99,999, and then repeat. They cannot be set to zero from any intermediate point. The No. 3 has two dials, the larger one registering to 99,999, and having no means of changing the record. The second dial reads up to 999, and can be set to zero at any time. To do this the knob at the side is pulled out and then turned till the figures on the centre and right dials are alike. The knob is then again pulled out and turned till all the figures are at zero, when it is pushed back into place. When the knob is in its normal position the index rings are mechanically locked so that they cannot be jarred out of place or moved accidentally. The means of attachment is the same as in the case of No. 1. No. 4 Counter is exactly the same as No. 2, except that the lever is shorter, and instead of registering with each oscillation it registers with each complete revolution. It is well adapted for use on rapidly and continuously running machines. Attachment is the same as in the case of No. 1. In fixing any of these Counters, care should be taken to have the swing of the lever just sufficient to move the figures and not enough to jam the mechanism.

Sizes, Nos. 1, 2, and 4 ... PRICE 5/- each. | Size, No. 3 ... ... PRICE 10/- each.

Slocomb's Combination Centre Drills.

1910

These Drills are made of best steel, carefully tempered, and should be run at a suitable speed for the Drill regardless of the countersink.

They save time by doing at one operation that which otherwise requires two. The time wasted in using inconvenient tools often amounts to many times the cost of the tools.

They always ream the countersink true with the central hole, and the reamer will not "run off" in centering a piece with an uneven end.

They will centre a piece after the old centres have been nearly squared out.

They ensure every centre being drilled deep enough.

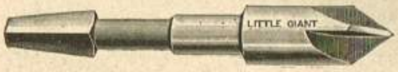
They will not chatter under any condition, for the pressure on point of drill, and the drill generally, steadies the reamer.

PRICES.

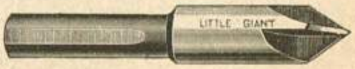
A	Size of Body, $\frac{3}{16}$;	Drills, $\frac{1}{8}$ and $\frac{3}{32}$in.	8d. each.	E	Size of Body, $\frac{13}{64}$;	Drills, $\frac{1}{16}$in. ...	8d. each.
B	,, $\frac{3}{16}$;	,, $\frac{1}{8}$in. ...	8d. ,,	F	,, $\frac{7}{16}$;	,, $\frac{5}{32}$in. ...	1/3 ,,
C	,, $\frac{3}{16}$;	,, $\frac{3}{32}$in. ...	8d. ,,	G	,, $\frac{7}{16}$;	,, $\frac{3}{16}$in. ...	1/3 ,,
D	,, $\frac{15}{64}$;	,, $\frac{7}{100}$in. and $\frac{8}{100}$in.	8d. ,,				

Please use letters only in ordering.

"Little Giant" Countersinks.



1911 For Brace Bit use.

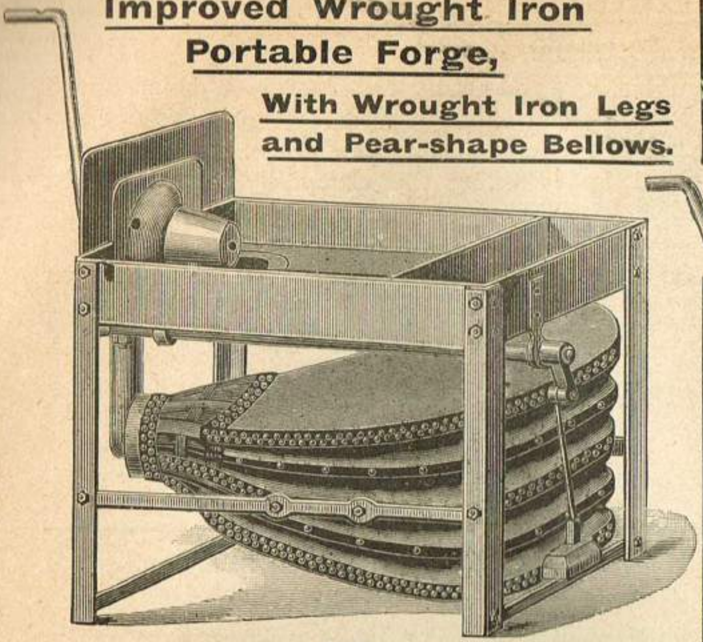


1912 For Drilling Machine use, $\frac{1}{2}$in. shanks.

Countersink $\frac{5}{8}$in. diameter, 1/9 each, either pattern.

Improved Wrought Iron Portable Forge,

With Wrought Iron Legs and Pear-shape Bellows.



1913

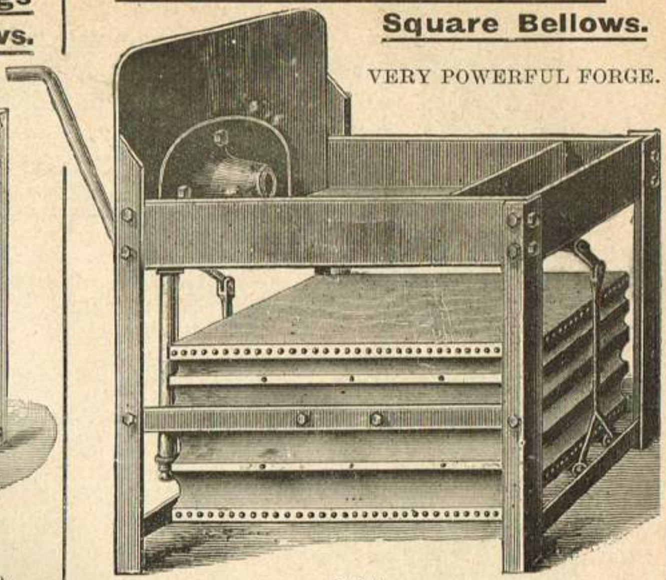
	Length.	Width.	Height.	Bellows.	Price.
No. A	26	by 20	by 32	by 20in.	... 75/-
No. B	26	,, 22	,, 32	,, 22in.	... 82/6
No. C	30	,, 24	,, 34	,, 24in.	... 90/-
No. D	33	,, 26	,, 34	,, 26in.	... 110/-

A handy and powerful Forge.
If mounted on Wheels, 21/- extra.

Improved Wrought Iron Portable Forge,

With Wrought Iron Legs and Square Bellows.

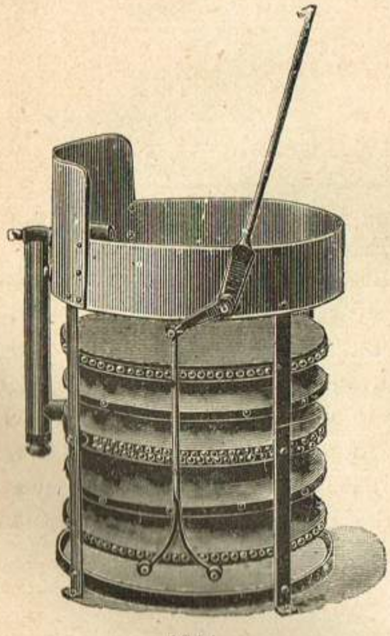
VERY POWERFUL FORGE.



1913A

	Pan.	£	s.	d.
No. A	24 by 18in.	4	10	0
No. B	30 ,, 22in.	5	7	6
No. C	32 ,, 26in.	7	15	0
No. D	34 ,, 28in.	10	0	0

Circular Rivet Forge.

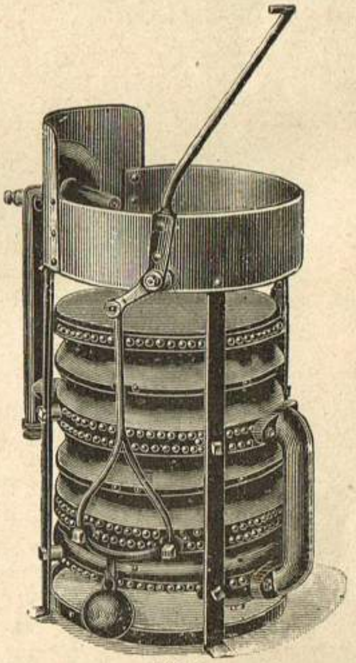


1914

	£	s.	d.
28in. high by 16in. Pan, 14in. Bellows ...	2	0	0
29 ,, by 18 ,, 16 ,, ...	2	2	6
29 ,, by 20 ,, 18 ,, ...	2	5	0
29 ,, by 22 ,, 20 ,, ...	2	10	0
30 ,, by 24 ,, 22 ,, ...	2	17	6
31 ,, by 26 ,, 24 ,, ...	3	5	0
32 ,, by 28 ,, 26 ,, ...	4	0	0

Circular Portable Forge,

With Double-Blast Bellows.



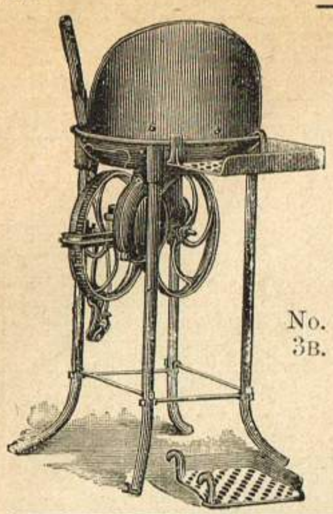
1915

	£	s.	d.
No. 1, 16in. Bellows	4	0	0
No. 2, 18 ,, ...	4	12	6
No. 3, 20 ,, ...	5	10	0
No. 4, 22 ,, ...	6	10	0
No. 5, 24 ,, ...	7	10	0

Prices include Weights.

"Scientific" Portable Forges.

(Carriage Forward.)



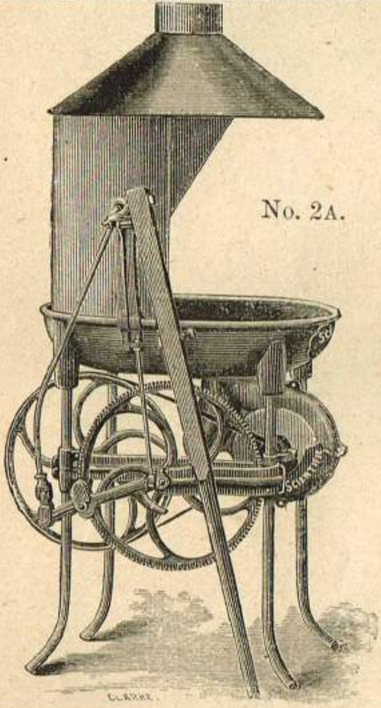
No. 3B.

These Forges are meeting a real need. They have been designed with a view to economy in use, and although made throughout of the best possible materials, are now offered at very low prices. The Belts can be instantly adjusted by loosening the clamp bolts and moving frame up or down.

The cut of No. **3b** shows two of our detachable shelves, one hung on the Forge and one on the ground. The shelves are an extra attachment in all cases, and can be applied to any of our Forges. They are sold at 5/6 each net.

Height (to top of fireplace)	33in.
Hearth (diameter)	18in.
Fan (diameter)	8in.
Weight	75lb.

Price £3 3s.



No. 2A.

The No. **2a** Forge will make a welding heat on 2½in. iron (round) in five to eight minutes.

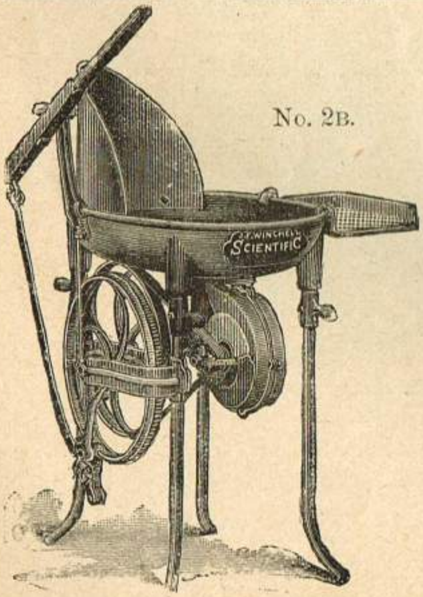
It is a favourite size and style for Engineering Works, Tool Works, Plumbers, Locksmiths, Planters and Railroad Repair Shops. The cut shows the detachable lever used on all of our Forges, as it appears when removed from its bearing and stood up out of the way. To take it out and replace it, it is only necessary to bring the end of the lever down until it is about level, when it can be rolled out of or into the socket.

No other Forge made can detach the lever. No dead centres; always ready to start.

Height (to top of Bowl)	29in.
Hearth	27 by 21in.
Fan (diameter)	10in.
Weight	150lb.

Price	£5 10 0
Price with Power Attachment	£5 17 6

No. **3a**, of similar design but Circular Hearth, 18in. diameter, with 8in. Fan, Weight 80lb., Price £3 10s.



No. 2B.

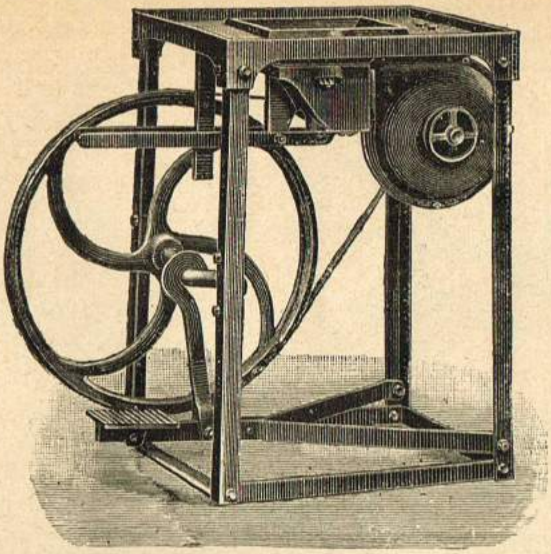
This Forge is especially adapted for the use of Boiler-makers, Iron Bridge and Ship Builders, Railway Works, Contractors' Miners, etc. A prime favourite with rivet heaters, as one boy can keep several gangs in work. It is provided with four handles for convenience in moving about, and has a very deep and large fireplace. The size of the Forge is the same as No. 2A. The shelf, shown in the cut, is an extra attachment, very convenient for tongs, chisels, punches, etc., and is sold at 5/6 each net.

Height (to top of Bowl)	29in.
Hearth	27 by 21in.
Fan (diameter)	10in.
Weight	145lb.

No. **2b.** Price £5.

Prices and Illustrations of other designs can be sent if required.

Portable Forges. (Nett and Carriage Forward.)

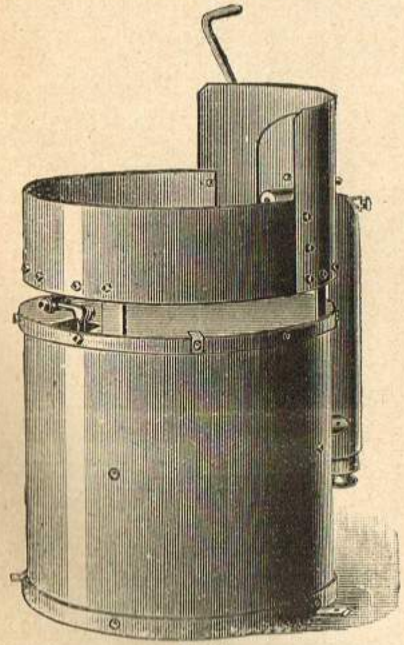


This Forge is especially adapted for Bridge Builders, Boiler Makers, Ship Builders, Engineers, Farriers, Wheelwrights, etc. It is capable of making welds in less time than any other Forge, and is without doubt one of the best Portable Forges on the market. All the parts are made of steel.

1916 No. 1 Height, 32in.; Size of Forge, 22 by 18in.; Diameter of Driving Wheel, 22in.; Weight, 160lb.; Price of Forge without tools or coal pan, £2 15s.; Ditto with tools, £3 3s.; Coal Pan, 4/- extra.

1917 No. 2 Height, 32in.; Size of Forge, 32 by 23in.; Weight, 285lb.; Price, without tools, £5 5s.; with coal pan cast in top.

Improved Rivet Forge, Single Blast.



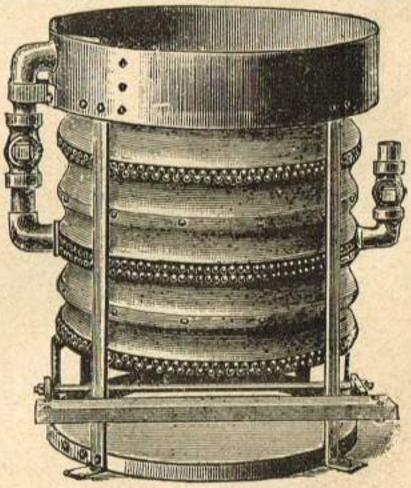
1918

The bellows being protected with Sheet Iron are preserved from the weather or accident, and the forge is therefore most suitable for outdoor work.

	Height.		Diameter.		Bellows.	Price.
No. A7	28	by	19	by	16 in.	60/-
,, B7	28	,,	21	,,	18 ,,	70/-
,, C7	28	,,	23	,,	20 ,,	80/-
,, D7	30	,,	25	,,	22 ,,	87/6
,, E7	31	,,	27	,,	24 ,,	100/-

Circular Forge & Brazier Combined,

For Cycle Makers and Others.



1919

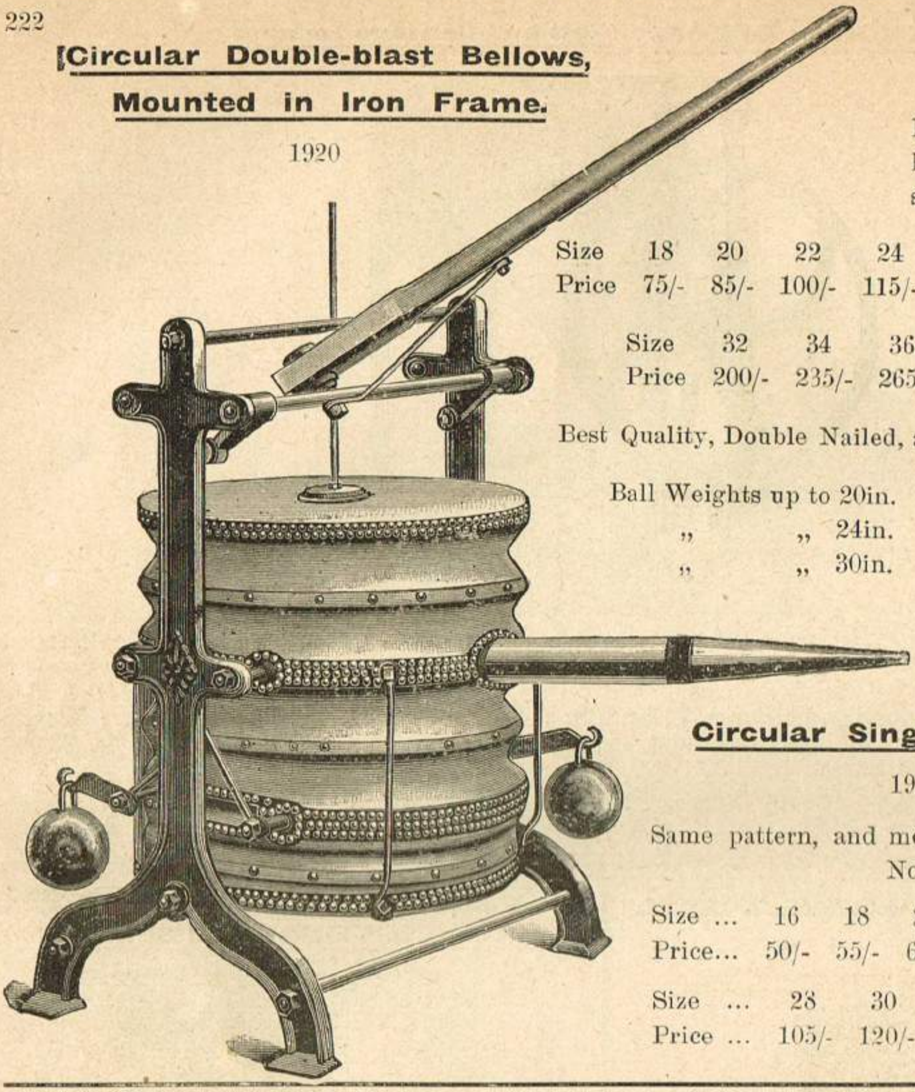
	Height.		Pan.		Bellows.	Price.
No. A12	29	by	20	by	18 in.	80/-
,, B12	29	,,	22	,,	20 ,,	85/-
,, C12	30	,,	24	,,	22 ,,	95/-
,, D12	31	,,	26	,,	24 ,,	110/-

Improved Brazing Pipe with Lever for above Forge.

14 in.	long	with	$\frac{5}{8}$ in.	Barrel	16/6
21 ,,	,,	,,	$\frac{3}{4}$,,	,,	21/-
23 ,,	,,	,,	$\frac{7}{8}$,,	,,	22/6
27 ,,	,,	,,	1 ,,	,,	25/6
31 ,,	,,	,,	$1\frac{1}{4}$,,	,,	32/6

Circular Double-blast Bellows, Mounted in Iron Frame.

1920



The most powerful Bellows made, and takes up half the room of the Long-shape Smiths' Bellows.

Size	18	20	22	24	26	28	30in.
Price	75/-	85/-	100/-	115/-	130/-	150/-	175/- each.

Size	32	34	36	38	40in.
Price	200/-	235/-	265/-	300/-	340/- each.

Best Quality, Double Nailed, and Extra Best, Warranted.

Ball Weights up to	20in.	5/6 extra.
„ „	24in.	6/6 „
„ „	30in.	7/6 „

Circular Single-blast Bellows.

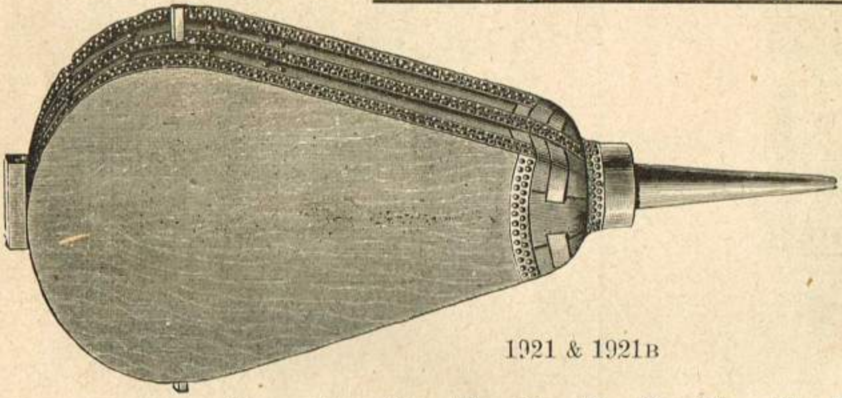
1920 S.B.

Same pattern, and mounted in Iron Frame, as No. 1920.

Size ...	16	18	20	22	24	26in.
Price...	50/-	55/-	60/-	70/-	80/-	92/6 each.

Size ...	28	30	32	34	36in.
Price ...	105/-	120/-	135/-	155/-	180/- „

Long-shape Smiths' Bellows.



1921 & 1921B

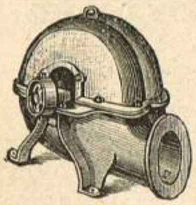
1921B These Bellows are extra best quality, extra leather, and double nailed, with two frames in both top and bottom.

We can supply cheaper qualities if desired, but do not recommend them, as the greater durability of the best quality more than compensates for their small extra cost.

	Sizes	18	20	22	24	26	28	30	32	34	36	38	40	42in.
1921	Best Quality, Price	30/-	36/-	42/6	50/-	60/-	67/6	80/-	90/-	110/-	140/-	176/-	220/-	260/- each.
1921B	Extra Best Quality	—	—	—	63/-	72/6	81/6	90/-	107/6	135/-	160/-	200/-	250/-	290/- „

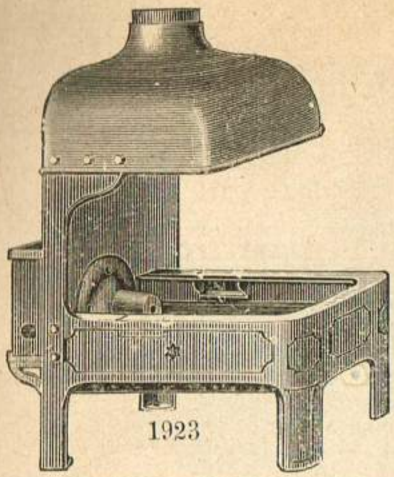
Fan Blowers.

Easy and Quiet in Running.



1922

Diameter of Disc.	No. of Fires.	Size of Pulley.	Revolutions per minute.	PRICE.
8in.	1	1½in.	4,000	£3 5 0 each.
10in.	3	2in.	3,500	4 5 0 „
13in.	5	3in.	3,000	5 18 6 „
16in.	8	4in.	2,200	7 10 0 „



1923

Smiths' Hearths,

Single.

Width.	Length.	Height.	Price.
ft. in.	ft. in.	ft. in.	£ s. d.
3 0 ...	3 0 ...	6 0 ...	11 5 0
3 0 ...	3 6 ...	6 0 ...	12 5 0
3 6 ...	3 6 ...	6 0 ...	13 0 0

Double.

Width.	Length.	Height.	Price.
ft. in.	ft. in.	ft. in.	£ s. d.
6 0 ...	4 0 ...	6 0 ...	25 10 0

Blast Standards.

1924
30in. high,
30/- each.

Cast Tue Irons.

1925T Cast Tue Irons only, to suit Cast Water Tanks 1925

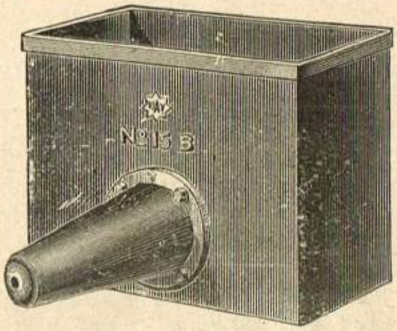
Nos.	1	2	3
	20/-	22/-	25/-

Cast Water-tanks and Tue Irons.

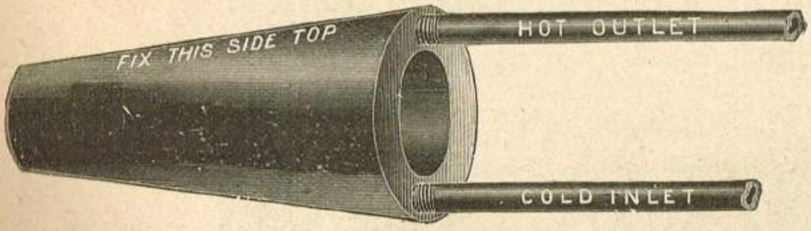
1925

21 by 21 by 7½in.	No. 1	33/6 each.
23 by 23 by 9in.	„ 2	40/- „
26 by 24 by 10½in.	„ 3	51/6 „

Blast inlets at sides or under extra.



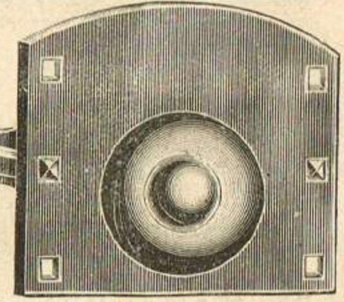
Wrought Water Tue Irons, with Tubes.



1926

13	15	17	19	21in.
15/-	18/-	20/-	25/-	33/6 each.

Smiths' Cast Forge Backs, Complete.



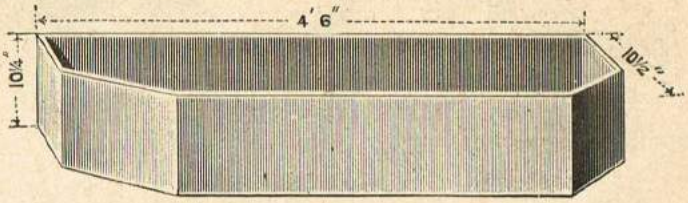
1927

No. 0	1	2	3
12/-	15/-	17/-	33/6 each.

Smiths' Troughs, Single.

1928

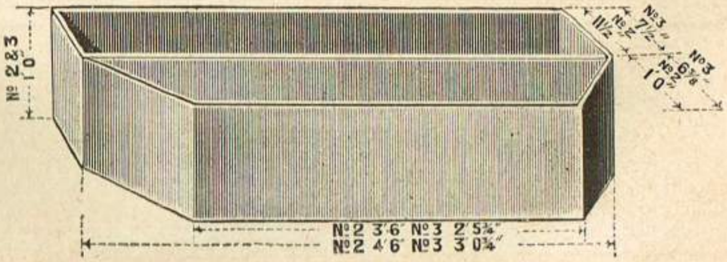
36in.	25/6 each
42in.	28/6 „



Smiths' Troughs, Double.

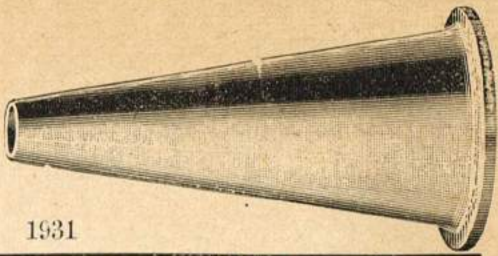
36in.	49/- each
42in.	54/- „
48in.	62/- „

1929

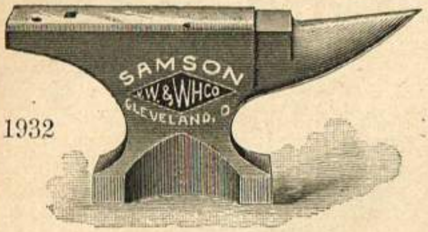


Smiths' Mandrils, Cast Iron.

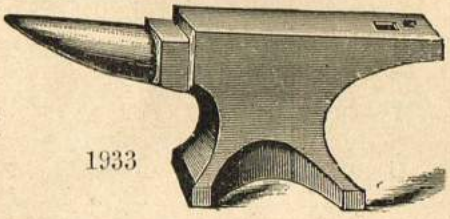
6in. by 3in. by 24in.	21/- each.
9in. by 3½in. by 24in.	32/6 ,,
15in. by 6in. by 48in.	63/6 ,,
24in. by 14in. by 48in.	105/- ,,


1931

Best Warranted Smiths' Anvils.

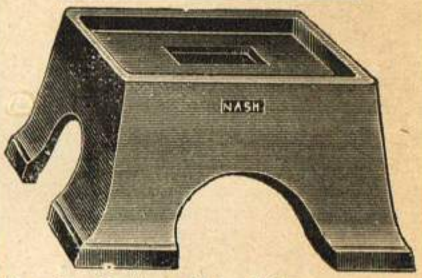

1932

SAMSON
W.W.&W.H.Co.
CLEVELAND, O.

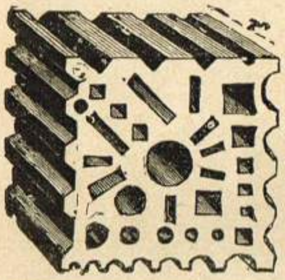

1933

1932 Samson Anvils, with heavy face of Best Crucible Cast Steel, 10lb. 15/-, 20lb. 16/6, 30lb. 18/-, 40lb. 21/-, 50lb. 24/- each.
1933 Best Blacksmiths' Anvils, 84lb. and over, 33/6 per cwt.

Cast Iron Stands.



The size of bottom of Anvil is necessary.
1934 14/- per cwt.


1935

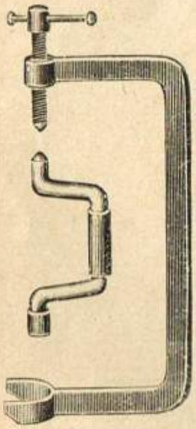
Cast Iron Swage Blocks.

11in. by 11in.	17/6 each.
13in. by 13in.	22/6 ,,
16in. by 16in.	31/6 ,,
18in. by 18in. by 6in.	38/- ,,
20in. by 20in. by 7in.	57/6 ,,

Stands for Swage Blocks.

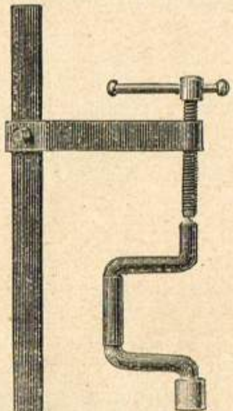
19/6 each.
22/6 ,,
29/- ,,
38/- ,,
50/- ,,

Smiths' Drilling Cramps and Braces.


1936

24in. 15/6
27in. 18/-

DRILL CRAMP AND BRACE.


1937

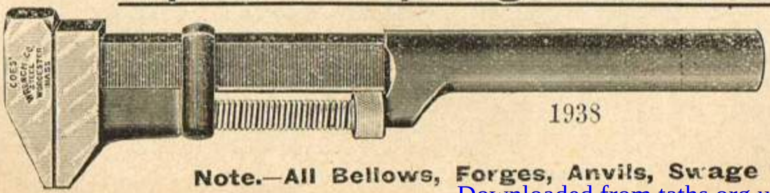
DRILL CRAMP AND BRACE, WITH SLIDING ARM.
No. 1. 24in., Bar 1⅝in. by ⅜in., 17/6 each.
No. 2. 26in., Bar 1¾in. by ½in., 20/- each.

Smiths' Drilling Cramp, with Curved Ends, for Holding Pipes or Tubes whilst being Drilled.

For Pipes 2in. to 4in., 20/- each.
,, 4in. to 6in., 28/- ,,
,, 5in. to 8in., 35/- ,,
Brace Extra.

For Prices of Braces for Above Cramps see Page 207.

Improved Drop-forged All Steel Coach Wrench.

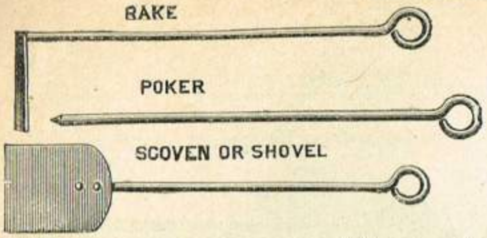

1938

COES' WRENCH CO. WORCESTER MASS.

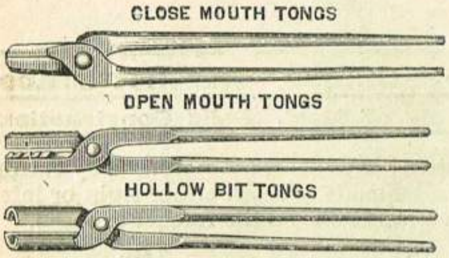
	8	10	12	15in.
Price	3/-	4/-	5/-	6/6 each.
Opening	1¼	1¾	2⅛	2⅝in.

Note.—All Bellows, Forges, Anvils, Swage Blocks, etc., Carriage Forward.

Smiths' Anvil Tools.



1941 ... ... 2/9 per set.



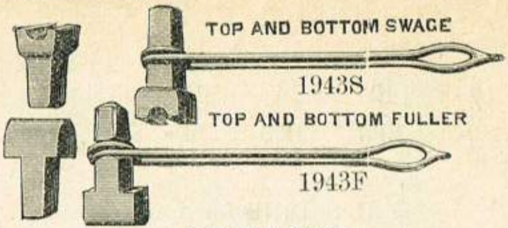
1942

Prices of either of above Patterns.

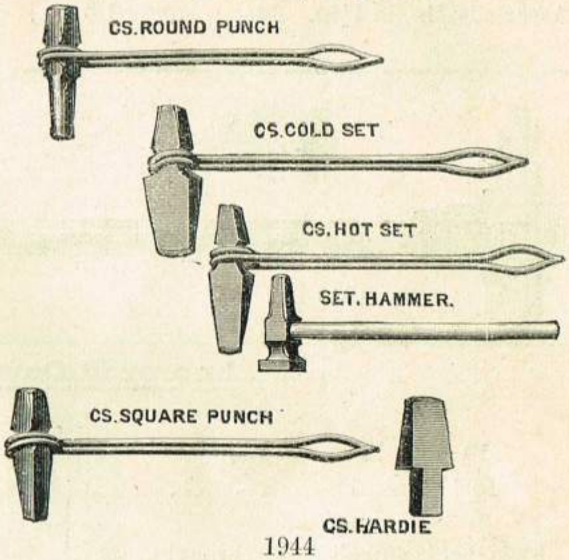
No. 1	1/7 per pair.
No. 2	2/- „
No. 3	2/3 „
No. 4	2/6 „

Duckbill Tongs. Prices and Sizes as above, either Pattern.

Farriers' Tongs ... ... 1/10 per pair.



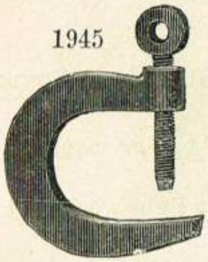
1943S & 1943F
Iron and Steel, 9d. per lb.



1944
Cast Steel, 11d. per lb.

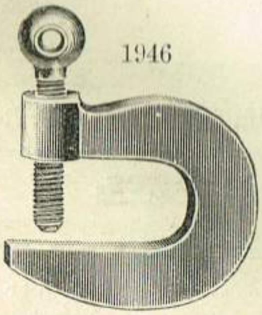
Boiler Cramps.

1945



	3	4	5in.
1945	6/-	7/6	8/6 each.

1946



	3	4	5in.
1946 Extra Strong ...	12/-	14/-	16/- each.

Cast Iron Stands

For Staple Vices.

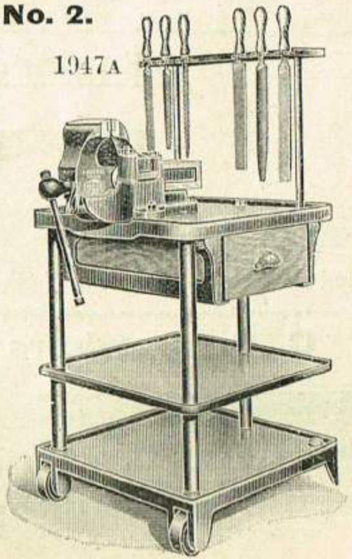
1947

Small, 18/-; Medium, 22/-; Heavy, 35/- each.
Extra for fitting Vices to Stands:
Small, 3/6; Medium, 4/-; Heavy, 5/-.

The "Perfect" Portable Vice Stands.

No. 2.

1947A



Three-decker Portable Stands, mounted on three wheels. Table 24in. square. Height of Table 30in. Weight 2cwt. 3qr. 20lb.

A Rack for 10 Files and Tray for holding small articles is fitted.

PRICE.
With Drawer,
£4.
Without Drawer,
£3 15s.

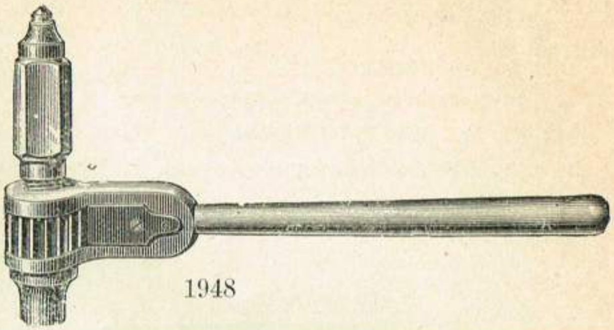
Vices extra, according to size.

Engineers' Ratchet Braces.

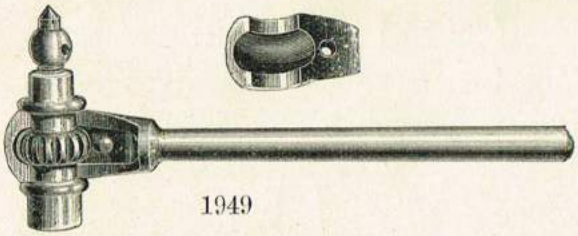
10	12	14	16	18in.
10/-	10/6	12/6	14/-	15/6 each.

C. S. Drills for same,

Assorted to 1in.	...	10/6 per doz.,	11d. each.
Assorted $1\frac{1}{8}$in. to $1\frac{1}{2}$in.	14/-	,,	1/3 ,,



1948



1949

The "Unique" Ratchet Brace.

Entirely of Steel. Solid Construction.

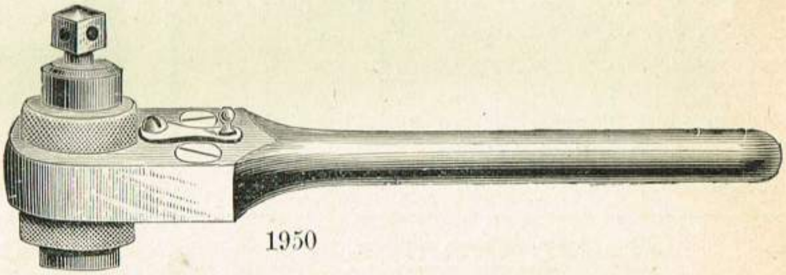
The Ratchet is entirely covered, and, by turning the socket, can be made to work either right or left hand. The illustration shows the ratchet exposed.

10	12	14in.
10/6	12/6	14/6 each.

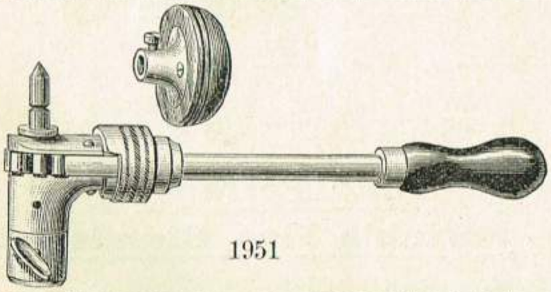
Improved Covered Ratchet Brace.

10	12	14in.
16/6	18/6	21/- each.

This tool is nickel-plated throughout, and its quality is in keeping with its superior finish.



1950



1951

Handy Ratchet Brace.

16in. long. Bright 5/-, Nickel-plated 6/- each.

A useful Brace for light work up to $\frac{1}{2}$in. holes.

Engineers' Chisels.

1953

1952

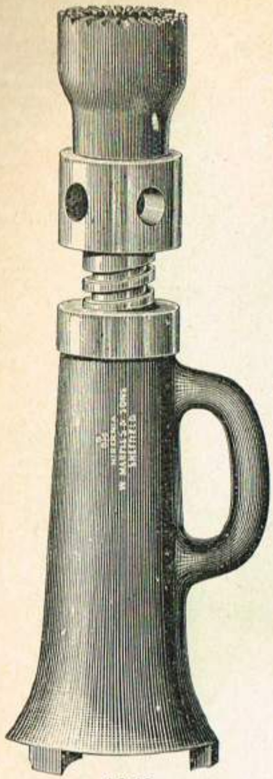
1954

Assorted Patterns, either Flat, Cross Cut, Diamond, or Half Round, 9d. per lb.

C. S. Crowbars and Road Wedges.

1955	Best Cast Steel Crowbars, octagon ends	28/- per cwt.
1956	,, ,, ,, round bar	24/- ,,
1957	Best Cast Steel Road Wedges, 16in. by $1\frac{3}{4}$in., octagon	28/- ,,
1958	,, ,, ,, 16in. by $1\frac{3}{4}$in., round or square..	24/- ,,

Lifting Jacks.

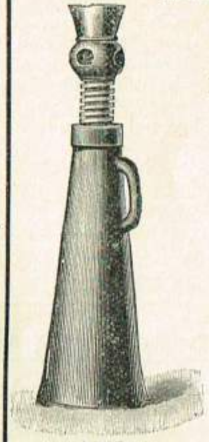


1959

Cast Head and Body (with Wrought Iron Screw).

No.	To lift tons	Height when down.	Price.
1	1½	12in.	6/-
2	2	15in.	8/-
3	4	18in.	10/6
4	5	21in.	13/-
5	6	24in.	16/6
6	8	24in.	19/-
7	10	24in.	22/-

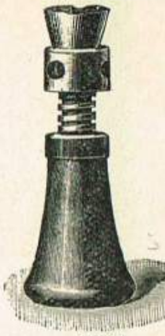
Bottle Jack (with Malleable Iron Case).



1960

No.	To lift tons	Height when down.	Pric
	2	9in.	8/-
2	3	12in.	9/6
3	4	15in.	13/-
4	5	18in.	15/6
5	6	21in.	19/6
6	8	24in.	21/6
7	10	24in.	28/-

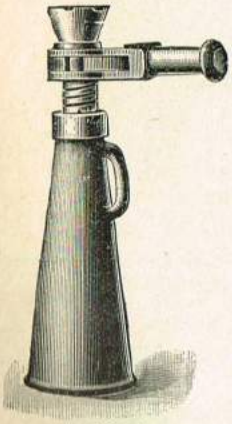
Short Lift Screw Jack.



1961

No.	To lift tons	Height when down.	Price.
1	2	6in.	8/6
2	4	8in.	13/6
3	5	9in.	15/6
4	6	9in.	20/-
5	8	10in.	23/6
6	10	10in.	33/-
7	15	12in.	50/-
8	20	14in.	70/-

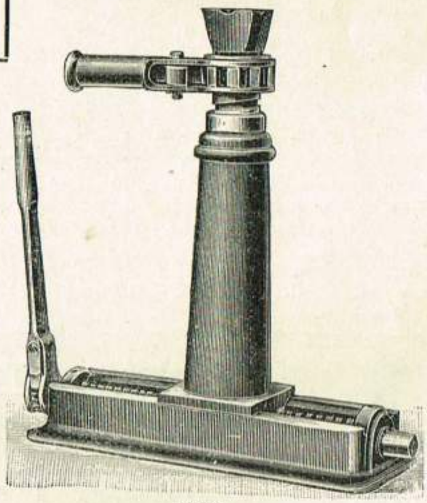
Ratchet Bottle Jack.



1962

No.	To lift tons	Height when down.	Price.
1	5	17in.	19/-
2	6	20in.	23/-
3	8	23in.	28/6
4	10	25in.	34/-
5	12	28in.	43/-
6	14	28in.	63/-

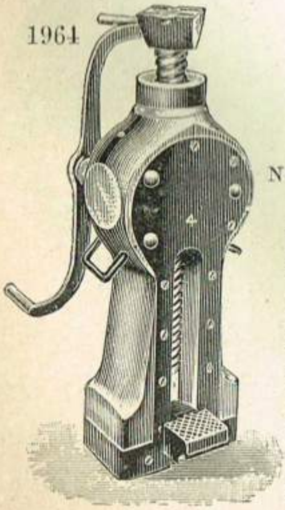
Bottle Traversing Jack (with Brass Bottom Nut).



1963

No.	To lift tons	Height when down.	Length of traverse.	Price.
1	6	20in.	7in.	56/6
2	8	22in.	7in.	60/-
3	10	24in.	10in.	70/-
4	12	24in.	12in.	75/-
5	15	26in.	14in.	85/-
6	18	26in.	16in.	112/-
7	20	26in.	16in.	135/-

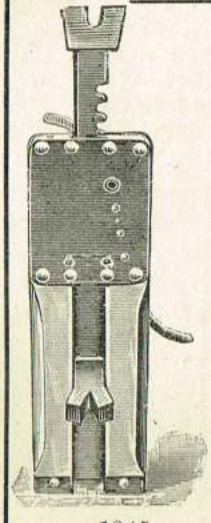
1964



Haley's Jacks (with Wood Case).

No.	To lift tons.	Diam. of Screw.	Height when down.	Price.
1	2	1¾in.	28in.	45/-
2	4	2in.	31in.	55/-
3	6	2¼in.	32in.	62/-
4	8	2½in.	34in.	77/6
5	10	2¾in.	34in.	84/-
6	12	3in.	36in.	107/-
7	16	3½in.	38in.	165/-
8	20	3⅞in.	41in.	205/-

Rack and Pinion Jack.



1965

A Jack generally used by Stonemasons and the Timber Trade.

Single Purchase.

No.	Height when down.	Tested to tons	Price.
1	32	2	60/-
2	36	3	70/-

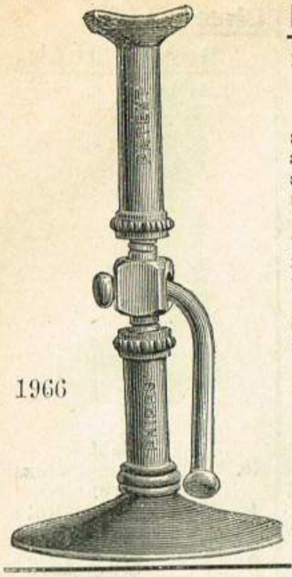
Above have gearing of best cast steel.

Double Purchase,

with wrought iron wheels and case hardened pinions.

No.	Height when down.	Tested to tons.	Price. £	s.	d.
1	30in.	4	5	15	0
2	30in.	6	7	0	0
3	32in.	8	7	17	6
4	34in.	10	9	5	0
5	36in.	15	13	10	0
6	38in.	20	19	5	0

Nos. 5 and 6 have steel rack pinions.



1966

Phipps' Patent Coach and Van Jack.

16in. High when down. Will run out 10in., making 26in. high. Weight 11lb.

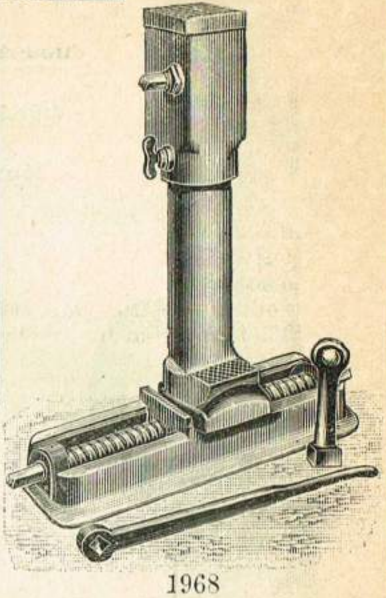
These Jacks are useful to Coach, Van, and Carriage Builders and Repairers. They are English made, strong, light, handy and compact. The Heads are leather-covered. Centre Blocks and Screws are solid forgings, with right and left hand square thread, 1in. diameter. The Heads and Bases are malleable iron.

They will not slip or shake down, therefore men can work under the vehicles safely. The Lever, being bent, can be used in very close positions; when not in use it hangs down out of the way, and cannot be lost.

They are good for the Coachman or the Coach Builder if supplied with additional head 4in. longer, making it useable at any height from 16in. to 30in., 3/- extra.

A very handy Jack, for MOTOR CAR USERS and specially adapted for this purpose.

Price 12/6 each.

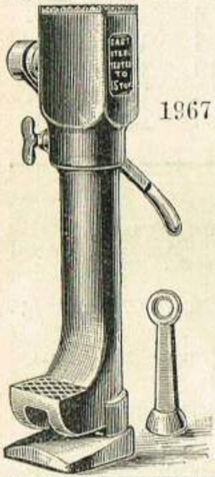


1968

Hydraulic Lifting Jacks.

These Jacks are so arranged that the weights can be lifted either by the head or foot, and one man can lift the full load.

The cylinders are made of a selected quality of metal, the ram is made of forged wrought iron, and the pump and plunger of gun-metal. Pump Wrench and Lever supplied with each Jack.



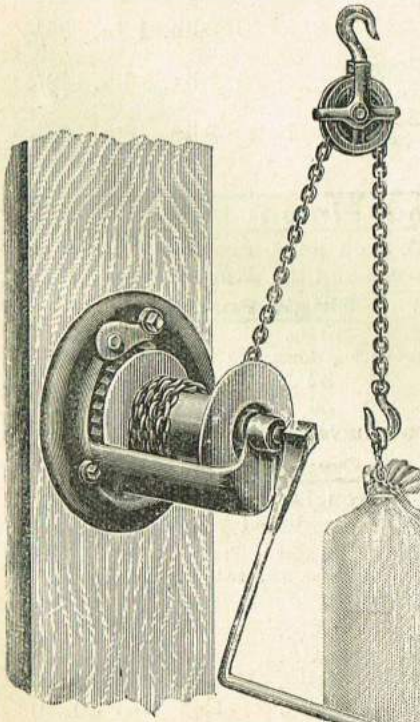
1967

1967 Hydraulic Lifting Jack.

Tested to	Tons	3	4	6	8	10	12	15	20	30	40	50	60
Height when down	Inches	18½	23	24	26	27	27	27	28	29	29	29	29
Run out	,,	6	10	10	11	12	12	12	12	12	11	11	10
Approx. weight	lb.	35	56	68	75	88	94	101	135	170	220	265	350
Price	...	60/-	72/-	75/-	82/-	85/-	90/-	95/-	105/-	130/-	155/-	200/-	250/-

1968 Hydraulic Lifting and Traversing Jack.

Tested to	Tons	3	4	6	8	10	12	15	20	30	40	50	60
Height when down	Inches	21	26	27	29	30	30	30	31	33	33	33	33
Length of Traverse	,,	6½	6½	7	7	10	12	14	16	18	18	18	18
Run out	,,	6	10	10	11	12	12	12	12	12	11	11	10
Approx. weight	lb.	70	99	102	114	131	148	165	213	312	352	486	574
Price	...	100/-	110/-	120/-	135/-	150/-	155/-	175/-	190/-	260/-	300/-	400/-	440/-



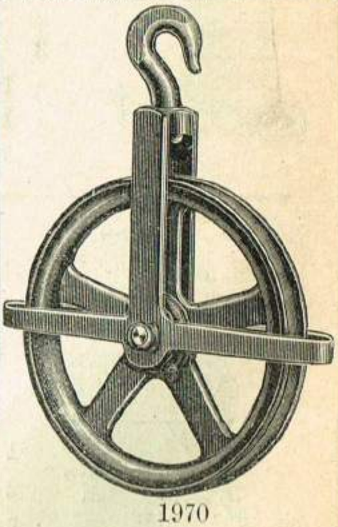
1969

Hoisting Tackle.

Safety Bracket Crab.

The load remains stationary when the handle is stopped. It is impossible for the load to run back of its own accord.

REDUCED PRICES.	£	s.	d.
To lift 2½cwt.	2	13	0
Single Sheave Pulley Block to lead to load	0	3	6
If to lift 5cwt., add a second Single Sheave Pulley ...	0	3	6
Chain with 1 Hook ...per ft.	0	0	5



1970

Gin Blocks, or Rubbish Pulleys.

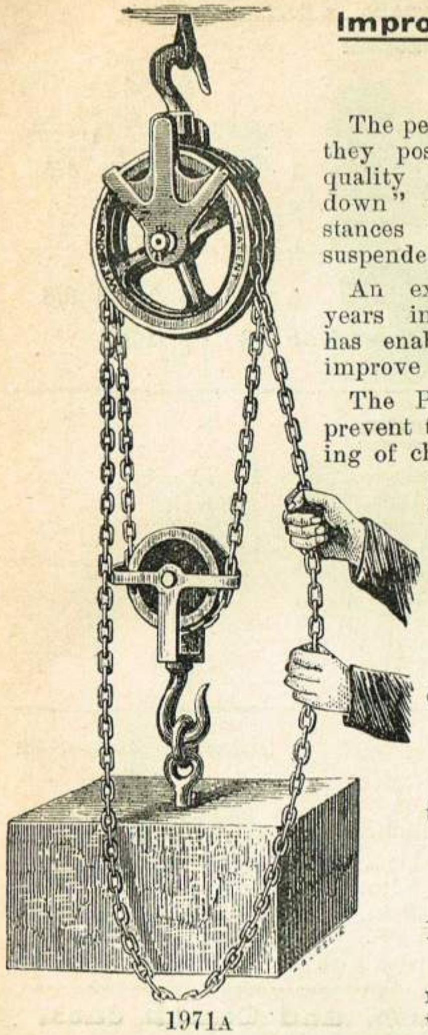
Diam. of Pulley	2½	3½	4	4¾	6	7	8	9	10	11	12	14	16	18	20	22in.
Width of Groove	⅜	½	⅝	¾	1	1	1	1	1	1	1	1¼	1½	1½	1½	1½in.
Weight ...	2	2½	3	4	10	11	12	14	16	17	21	30	43	48	58	64lb.
Price, each	3/-	3/3	3/6	4/-	4/6	5/-	5/6	6/-	6/6	7/6	8/3	9/-	12/-	14/-	17/-	19/-

The actual width of groove is from $\frac{1}{16}$ to $\frac{1}{8}$ more than list, to allow for new rope being larger.

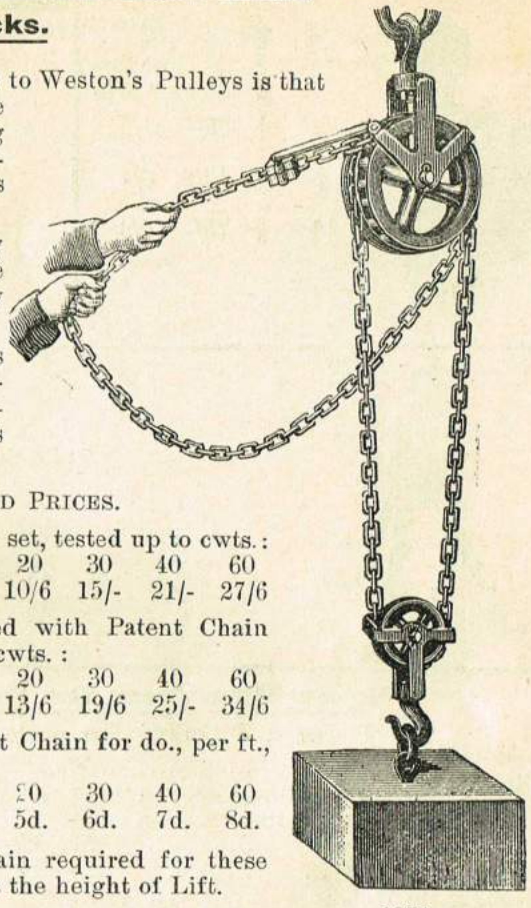
Hoisting Tackle.

Improved Weston's Differential Pulley Blocks.

With Guide.



1971A



1971B

The peculiar merit attached to Weston's Pulleys is that they possess the invaluable quality of not "running down" under any circumstances while the load is suspended.

An experience of many years in their manufacture has enabled us to greatly improve their construction.

The Patent Chain Guides prevent the troublesome locking of chains, and are recommended on this account.

REDUCED PRICES.

1971A Blocks per set, tested up to cwts.:

5	10	15	20	30	40	60
4/6	6/6	8/6	10/6	15/-	21/-	27/6

1971B Ditto, fitted with Patent Chain Guides, tested up to cwts.:

5	10	15	20	30	40	60
6/6	9/6	11/6	13/6	19/6	25/-	34/6

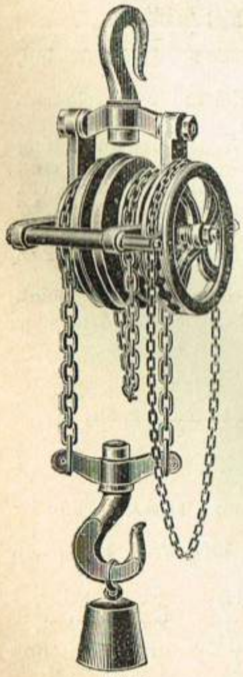
1971C Best Bright Chain for do., per ft., tested up to cwts.:

5	10	15	20	30	40	60
4d.	4d.	4½d.	5d.	6d.	7d.	8d.

The length of Chain required for these Blocks is FOUR times the height of Lift.

The above Blocks should not be loaded to more than two-thirds of the weight to which they are tested.

Moore's Patent Differential Pulley Blocks.



1972

Self-sustaining, Simple in Construction, Work with Great Ease, Will Lift at any Angle, No Trouble to Keep in Order.

A One-ton "Moore's" Pulley Block is safe for a working load of 20cwt. Every Block, with the required lift of chain, is tested to 12½ per cent. above its normal load, or Price List power, which the Blocks are sold to lift under ordinary working conditions.

Requires only about half the Length of Chain used in "Weston's" Blocks. Both Chains take equal Share of Load, therefore Block Hangs Plumb.

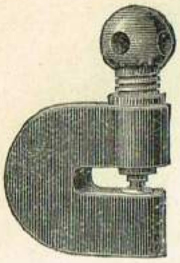
To Lift.	Price of Block, including Hand Chain.	Price of Lifting Chain.	Length of Lifting Chain.
½ ton	21/-	9d. per ft.	½, 1, 1½, 2 ton sizes, ADD 3ft. to double the height of lift required.
1 ,,	30/-	1/2 ,,	
1½ ,,	37/6	1/3 ,,	
2 ,,	45/-	1/3 ,,	
3 ,,	65/-	1/9 ,,	Sizes 3, 4, 5, 7½, 10 ton Add 5 5 6 8 8ft. to double the height of lift required.
4 ,,	85/-	1/9 ,,	
5 ,,	105/-	2/- ,,	
7½ ,,	175/-	3/9 ,,	
10 ,,	250/-	5/9 ,,	

	½	1	1½	2	3	4	5	7½	10 tons.
Approximate Weight of Block ...	28	48	66	82	130	160	244	500	1088lb.
Lifting Chain, per 100ft.... ...	38	66	107	117	146	216	330	500	760 ,,
Hand Chain, per 100ft.	38	48	48	48	48	48	48	48	66 ,,

☞ Double the Lift gives Length of Hand Chain in each Block.

Punching Bears.

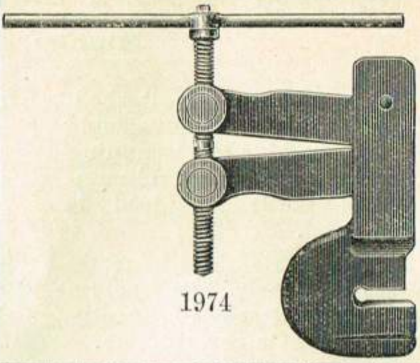
Screw Bears.



1973

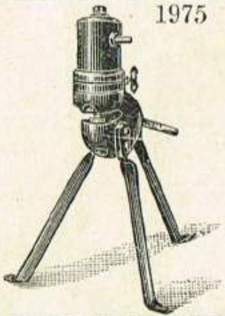
No.	To Punch.	Through.	Price.	Extra Punches and Dies per pair.
1	$\frac{1}{2}$	$\frac{1}{4}$	35/-	4/6
2	$\frac{3}{4}$	$\frac{3}{8}$	43/6	6/-
3	$\frac{13}{16}$	$\frac{5}{8}$	75/-	6/6

Duplex Bears, Quick-acting.



1974

No.	To Punch.	Through.	Price.	Extra Punches and Dies per pair.
1	$\frac{1}{2}$	$\frac{1}{4}$	55/-	4/6
2	$\frac{3}{4}$	$\frac{3}{8}$	77/6	6/-
3	$\frac{3}{4}$	$\frac{1}{2}$	102/6	6/-
4	$\frac{13}{16}$	$\frac{5}{8}$	107/6	6/6
5	$\frac{7}{8}$	$\frac{5}{8}$	187/6	7/6



1975

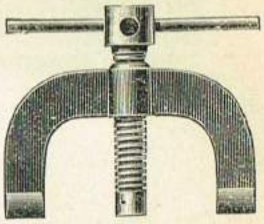
Hydraulic Bears.

No.	To Punch.	Through.	Price.	Extra Punches and Dies per pair.
1	$\frac{3}{4}$	$\frac{1}{2}$	£8 5 0	6/6
2	$\frac{13}{16}$	$\frac{5}{8}$	8 17 6	7/-
3	1	$\frac{3}{4}$	10 15 0	8/-
4	$1\frac{1}{8}$	$\frac{7}{8}$	16 5 0	8/6
5	$1\frac{1}{4}$	1	22 17 6	9/-
6	$1\frac{1}{2}$	$1\frac{1}{8}$	33 10 0	11/6

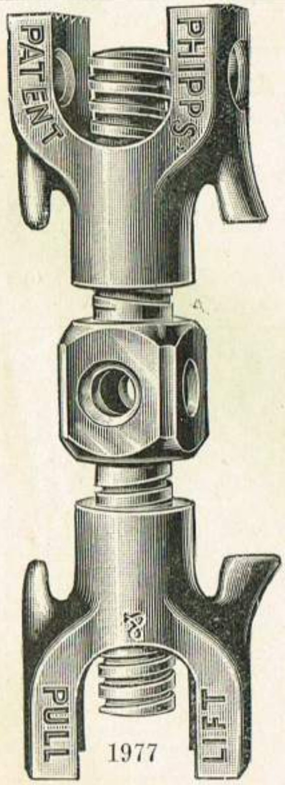
Screw Jim Crow for Ordinary Rails.

The Bodies and Screws are made of best forged Iron.

Size ... ... No.	0	1	2	3	3A	4
To bend Iron Rails, ordinary section up to	24	30	55	75	85	100lb. per yd.
To bend Steel Rails, ordinary section up to	16	20	45	65	75	90lb. „
Span between Claws	14	16	20	24	24	24in.
Diameter of Screw	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$in.
Approximate Weight	42	64	100	140	155	180lb.
Price	32/6	43/6	52/6	75/-	90/-	105/- each



1976



1977

Phipps' Patent Lift, Pull, Push, and Cramp Jack.

For Straining Fencing Wire, Rope, or Chains.
Will Cramp Iron and Steel Plates, Pipe Flanges, etc., for Boring or Drilling.

These extremely useful tools will be found most handy for a thousand purposes, are very strong and well fitted, and possess great power. The centre block and screws are a solid forging, with right and left square thread. The heads are malleable.

Mechanics who have used them declare the smaller sizes to be essential to every workman's kit. They save Time, Money, and Temper, and are what are wanted by

Engineers—They will Lift, Push and Pull; are extremely useful for erecting and taking down, and repairing machinery of all kinds; will raise lathe beds, engines, shafts, etc.; will push over into position heavy pieces, and adjust for getting in bolts, screws, etc. They will lift and hold in suspension, crank shafts, cylinder covers, bearings, etc., by passing chain or rope round lugs and the piece to be lifted; they can be used where blocks cannot be got in. (The broken propeller shaft of "S.S. UMBRIA" was held up in this manner recently. *See Engineering Papers.*)

Pipe Fitters—For breaking joints in pipes, for pulling up long stretches to make the joint.

Van Builders—To stand on axle and lift body of van, to put in new scroll iron, new bolts on, for stretching open, shafts, etc.

Masons—For stone fixing and lifting, used as a lewish.

Builders—For lifting roofs, girders, walls for underpinning.

Contractors—For bridge and pier building, strutting earth when tunnelling, etc.

Ship Builders—For both new work and repairs generally.

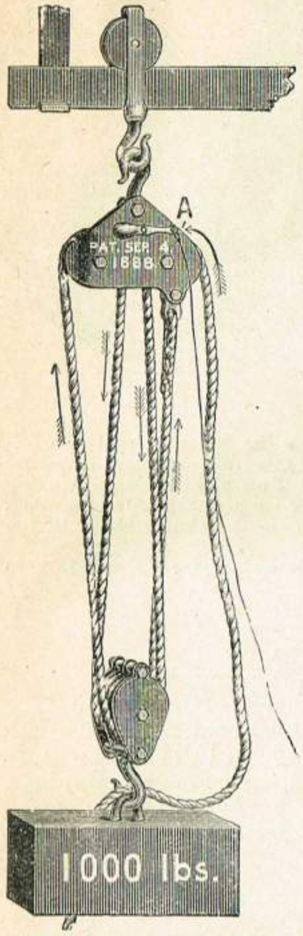
The first two sizes weigh $2\frac{3}{4}$ and $4\frac{1}{2}$lb. respectively, and should form part of every workman's kit to enable him to tackle heavy weights, single-handed, with ease.

They will CRAMP and hold many articles for boring or drilling, and are also most handy for straining fencing wire, rope, or chains.

Numerous testimonials confirm the advantages claimed for this Lift, Pull, Push, and Cramp Jack.

Size in inches when down	6	8	10	12	14	16	18	20in.
Diameter of Screw ...	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$in.
To Lift	1	1	$1\frac{1}{2}$	2	4	6	8	10 tons
Weight	$2\frac{3}{4}$	$4\frac{1}{2}$	$9\frac{1}{2}$	$13\frac{1}{2}$	$21\frac{1}{2}$	34	48	75lb.
Price	8/6	8/6	11/-	13/6	19/-	24/-	29/6	39/6

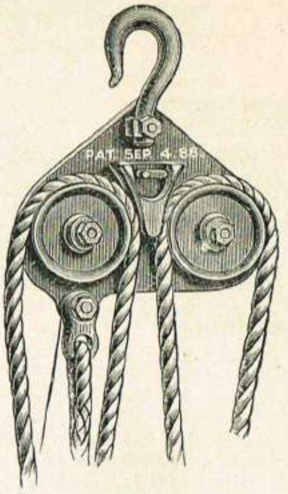
The Detroit Patent Sure-grip Steel Tackle Block.



The Sure-grip Steel Tackle Block will hold load at any point without fastening the rope. The Brake is absolutely automatic —the heavier the load the better the grip.

This is an invention resulting from a necessity long felt in the inventor's own works for a block in which rope can be used to raise and lower quickly, and in which the height of hoist is not limited nor the efficiency of brake in the least questionable. Repeated tests and constant use have disclosed the valuable labour-saving qualities of the Sure-grip Block, and it is placed upon the market with the conviction that many others cannot afford to be without it.

The brake is susceptible of being disengaged by very slight pressure on the trip cord. The body of Block is made of steel plates. The pins are cold-rolled steel. The essential castings are malleable iron, making the strongest and safest possible combination of materials, thus affording immunity from accidents in the highest degree. The brake is a fluted wedge dropping between two ropes in such a manner that the load is brought on all the strands of the rope at the same time. The brake does not flatten the rope, consequently the wear upon it is reduced to a minimum. This Block will be found particularly valuable by builders, contractors, engineers, warehousemen—in fact, in every place where hoisting blocks are used. They are much lighter and more convenient to use than chain blocks, and do not injure the hand in using.



INSTRUCTIONS FOR REEVING.

Enter rope at A, pass wedge, and follow arrows as shown in cut. It will be noticed the two centre ropes *coming in contact with wedge* always travel in same direction at same time. Take the twist out of rope before reeving.

The cost is no more than for ordinary blocks, and the saving in time by using them will soon pay the entire cost.

They have stood a test of more than double the capacity we claim.

Nos. 3, 4, 5, and 6 are Single Blocks. Nos. 4½, 5½, and 6½ are Double Blocks.

PRICES AND CAPACITY.

No. 3	Using	⅜in.	Rope.	One man can lift	300lb. ;	Capacity	600lb. ...	..	Price 12/6
No. 4	,,	½in.	,,	,, ,,	350lb. ;	,,	1,000lb. ...	...	,, 23/-
No. 5	,,	⅝in.	,,	,, ,,	400lb. ;	,,	1,800lb. ...	...	,, 30/-
No. 6	,,	¾in.	,,	,, ,,	450lb. ;	,,	2,500lb. ...	...	,, 36/-
No. 4½	,,	½in.	,,	,, ,,	600lb. ;	,,	3,000lb. ...	...	,, 42/-
No. 5½	,,	⅝in.	,,	,, ,,	700lb, ;	,,	3,500lb. ...	...	,, 50/-
No. 6½	,,	¾in.	,,	,, ,,	850lb. ;	,,	5,000lb. ...	...	,, 60/-

When Ropes are supplied with Blocks no extra charge for Reeving.

PRICES OF ROPES.

⅜in., 2d. per yard ; ½in., 3d. per yard ; ⅝in., 5d. per yard ; ¾in., 7d. per yard.

For single Blocks, Nos. 3, 4, 5, and 6, five lengths of Rope are required ; for double Blocks, Nos. 4½, 5½, and 6½, eight lengths. When ordering Blocks with Ropes give height to be raised.

The "Reeves" Wood Split Pulleys.

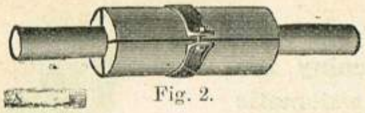


Fig. 2.

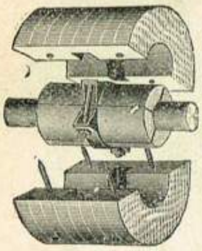


Fig. 1.

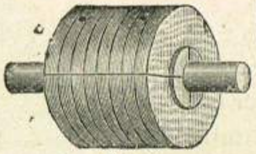
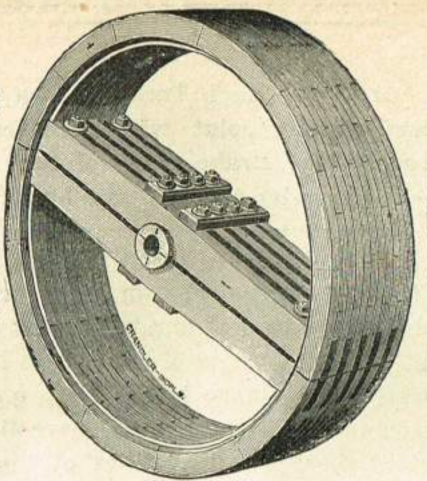
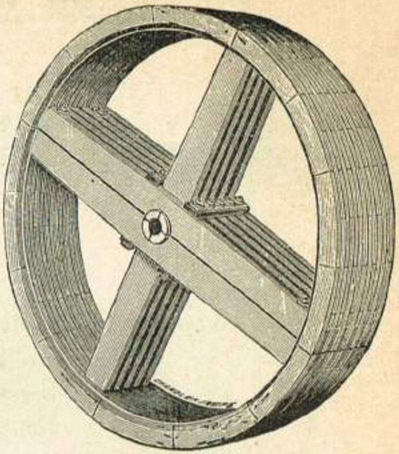


Fig. 3.



No. 1 Pulley.



No. 4 Pulley.

Figs. 1, 2 and 3. above, show the style of pulleys from 6in. to 9in. diameter, and illustrate how the difficulty has been overcome of constructing a small pulley that will admit the same sized bushing and yet have the same proportionate clamping facilities as the larger sizes. This cannot be claimed by any other pulley on the market. Fig. 1 illustrates the clamp securing the bushing to the shaft with the pulley opened to show the recess for the clamps, also the means for securing the halves together. Fig. 2 shows the pulley ready for use, and Fig. 3 shows the special form of clamp required to secure the 3½in. bushing in the 6in. diameter pulley.

Pulleys Nos. 1 and 4 are also illustrated above. The No. 1 is generally supplied for ordinary use for Pulleys 12in. to 36in. diameter. For extra heavy work or for larger sizes the No. 4 is more suitable.

POINTS OF SUPERIORITY.

1. SAVING IN WEIGHT.—They are from 40 to 75 per cent. lighter than iron.
2. SAVING OF LINE SHAFT.—In consequence of the relief of weight on the line shaft.
3. SAVING IN PUTTING IN PLACE.—Lightness of Pulley and consequent ease of handling.
4. SAVING IN BELT SLIPPAGE.—Belt adheres to a Wood Pulley about 50 per cent. better than to a Cast-iron Pulley, therefore they can be run with more slack, relieving strain on both belts and boxings.

We guarantee our Pulleys to transmit from 25 to 50 per cent. more power than cast or steel pulleys with same tension on belt.

BUSHING SYSTEM.—Pulleys are bored to 3½ inches, and bushing in four sections can be supplied to suit any shaft.

FINISH.—Our Pulleys are all finished in pattern shellac and varnish. Shellac is almost impenetrable, and the best-known wood preservative.

ARMS.—The arms of this Pulley are composed of a series of boards glued and nailed in each alternate layer of the rim, as the Pulley is built up. Thus the arm and rim form one solid structure, doing completely away with all questionable and suspicious arm fastenings.

Our method of construction places the timber edgewise to the strain; thus we are enabled to construct the lightest and yet strongest arm possible.

PRICES.

Diameter in inches.	Width of Face of Pulleys in inches.								
	3	4	6	8	10	12	14	15	16	18
6	7/-	7/6	8/6	10/3	—	—	—	—	—	—
8	7/9	8/3	9/6	11/-	—	—	—	—	—	—
10	8/9	9/6	11/-	12/6	14/6	—	—	—	—	—
12	10/-	10/6	12/3	14/3	16/9	19/-	—	—	—	—
14	11/-	11/6	14/-	16/-	18/9	21/9	24/9	—	—	—
16	12/-	13/-	15/9	18/9	22/-	25/-	28/-	30/-	32/3	—
18	13/3	14/9	18/-	21/-	24/6	28/-	32/3	34/9	37/6	42/-
20	14/6	16/3	20/-	23/9	28/-	32/6	37/6	40/6	43/-	48/6
22	15/9	17/6	22/-	26/3	31/-	36/9	42/6	45/-	48/6	55/3
24	17/3	19/6	24/6	29/6	35/-	41/-	48/-	51/9	55/6	63/3
26	19/6	22/-	27/-	33/-	39/6	47/-	55/-	60/-	63/9	73/-
28	22/-	24/6	29/9	37/-	43/9	51/9	60/-	66/-	70/-	80/-
30	24/6	27/-	33/6	41/-	48/9	58/-	67/-	72/6	78/9	89/-
32	—	29/6	37/-	44/-	53/3	63/6	74/6	80/-	86/-	97/6
34	—	33/6	41/-	50/-	59/6	70/6	81/9	87/9	93/9	105/-
36	—	36/9	45/9	55/6	66/-	75/-	87/9	93/6	100/-	112/6
42	—	—	59/-	72/-	84/9	96/6	109/6	115/6	122/-	138/-
48	—	—	—	90/-	106/6	120/-	134/-	144/-	150/-	168/-

In ordering Pulleys give (1) diameter; (2) width of face; (3) whether straight or crown face; (4) exact diameter of shaft.

Shultz Patent Sable Raw-hide Belting.

COPYRIGHTED
IT BELTS THE EARTH AND MAKES THE MOON SPIN LIKE A TOP.
SHULTZ PATENT FULLED LEATHER BELTING
SHULTZ BELTING CO.
MANUFACTURERS OF
OUR BELTING IS TANNED ON THE SURFACES ONLY. INTERIOR IS RAWHIDE. The only Perfect Belt made. No slipping or lost motion.
ST. LOUIS. MO.
ALSO RAWHIDE LACE LEATHER.

Shultz Leather is tanned on the surface only; the interior of the hide, which is the fibre, is raw hide, and is softened and made pliable by a patent process. This gives it all the advantages of tanned leather, and it retains the strength of the raw hide. The grain is soft and something like kid, which causes it to adhere to the pulley; this, combined with its great strength and pliability, gives it its wonderful driving power, and hence no lost motion. On account of its softness and pliability, it is especially adapted in places where belts have to run over small pulleys at high speed, and where they have to run on a twist. It has no equal where there is hard service and great strain, and for main drive belts on engines it will outwear any other belting made.

SINGLE BELTING.

Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.
1in.	5d.	2¼in.	1/1	4in.	2/1	7in.	3/9	12in.	6/5	17in.	9/2
1¼in.	6½d.	2½in.	1/3	4½in.	2/4	8in.	4/3	13in.	7/-	18in.	9/10
1½in.	8½d.	2¾in.	1/4½	5in.	2/7½	9in.	4/9½	14in.	7/7	20in.	10/10
1¾in.	10d.	3in.	1/6	5½in.	2/11	10in.	5/4½	15in.	8/3	22in.	11/10
2in.	11½d.	3½in.	1/9½	6in.	3/2	11in.	5/11	16in.	8/10	24in.	13/-

DOUBLE BELTING.

Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.
1½in.	1/5	2½in.	2/6	4in.	4/2	6in.	6/4	10in.	10/9	14in.	15/-
1¾in.	1/8	2¾in.	2/9	4½in.	4/8	7in.	7/6	11in.	11/10	15in.	16/6
2in.	1/11	3in.	3/-	5in.	5/3	8in.	8/6	12in.	12/9	16in.	17/9
2¼in.	2/2	3½in.	3/7	5½in.	5/10	9in.	9/7	13in.	14/-	17in.	18/3

Best Quality English Oak Tanned Belting.

SINGLE BELTING.

Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.
1in.	3d.	2½in.	8½d.	4in.	1/4	6in.	2/1	8½in.	3/1	11in.	4/1
1¼in.	3½d.	2¾in.	10d.	4¼in.	1/5	6½in.	2/3	9in.	3/3	11½in.	4/3
1½in.	4½d.	3in.	11d.	4½in.	1/6½	7in.	2/6	9½in.	3/6	12in.	4/7
1¾in	5½d.	3¼in.	1/-	4¾in.	1/8	7½in.	2/8	10in.	3/8	13in.	5/-
2in.	6d.	3½in.	1/1	5in.	1/9	8in.	2/10	10½in.	3/11	14in.	5/3
2¼in.	7d.	3¾in.	1/2	5½in.	1/11						

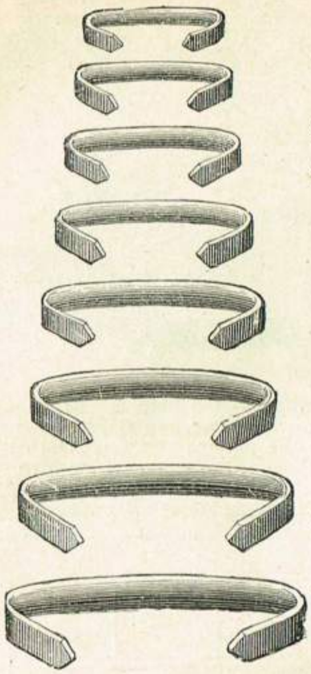
DOUBLE BELTING.

Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.	Width.	Price per foot.
2in.	1/1	4in.	2/6	6in.	3/11	9in.	6/3	12in.	8/10	18in.	14/-
2½in.	1/5	4¼in.	2/9	6½in.	4/3	9½in.	6/7	13in.	9/6	19in.	14/9
3in.	1/9	4½in.	2/11	7in.	4/8	10in.	7/-	14in.	10/6	20in.	15/6
3¼in.	1/11	4¾in.	3/-	7½in.	5/1	10½in.	7/7	15in.	11/3	22in.	16/10
3½in.	2/2	5in.	3/3	8in.	5/7	11in.	8/1	16in.	12/3	24in.	18/3
3¾in.	2/4	5½in.	3/6	8½in.	5/11	11½in.	8/6	17in.	13/-		

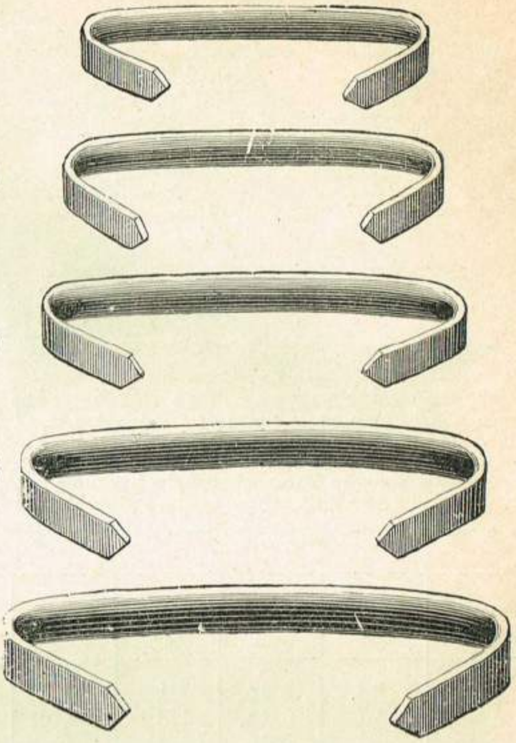
Bands are cemented with the best cement, and riveted. They are sewn with hemp, lace, or wire, at the option of the purchaser. Bands can also be supplied cemented only; also cemented and riveted only, all at above prices. All bands sewn with hemp unless otherwise ordered. Belt Dressing, 1/6 per lb. Belt Cement, 2/6 per lb.

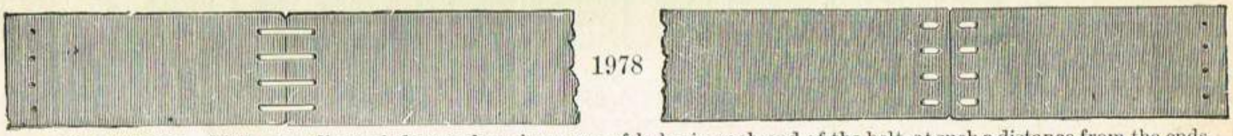
American Patent Belt Fasteners.

		Per Hundred —
For Belts 1 to 1½in.	No. 15	5d.
	„ 14	6d.
	„ 13	7d.
	„ 12	8d.
1¾ to 3½in.	No. 11	9d.
	„ 10	10d.
	„ 9	11d.
4 to 8in.	No. 8	1/-



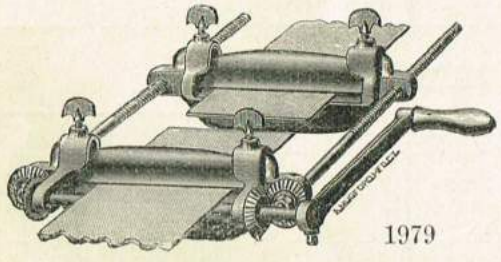
		Per Hundred—
4 to 8in.	No. 7	1/4
	„ 6	1/9
9in. and larger.	No. 5	2/3
	„ 4	2/6
	„ 3	3/-





1978

DIRECTIONS.—With an ordinary belt punch make a row of holes in each end of the belt, at such a distance from the ends as to allow the two ends to touch when the hooks are in their place. Insert the Fasteners and close down the ends with a hammer. To take up the belt, raise the ends of the hooks, slip them out, cut off the belt, and again insert the hooks as before.



1979

Billing's Patent Belt Clamp.

This illustration represents one of the most complete and useful articles for those using belts requiring to be drawn together and laced while upon the pulleys.

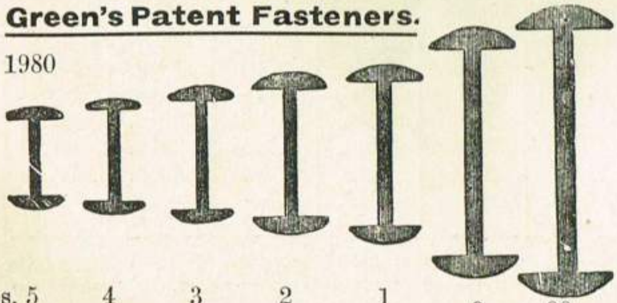
DIRECTIONS.—The low side of the two movable cams should be applied under the centre of the thumbscrews. A slight pressure of the thumbscrews on the cam is sufficient, as the act of drawing the belt together causes the cams to roll, giving a pressure on the belt sufficient to hold it securely.

PRICES.

	£ s. d.		£ s. d.
8in.	3 0 0	24in.	6 5 0
12in.	3 15 0	28in.	7 5 0
16in.	4 15 0	32in.	8 0 0
20in.	5 10 0	36in.	9 0 0

Green's Patent Fasteners.

1980



These Belt Fasteners are designed as a substitute for the leather laces and rivets now employed. They are easier on the Belt, more readily applied, and pass more smoothly over the Pulley. They make stronger joints than any Fastener now in use, and are cheaper and more durable.

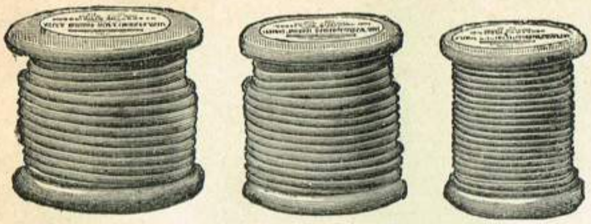
The Belt Fasteners are packed in boxes of 100 each. Printed directions for applying them on each box.

No. 00, the largest size, is suitable for four or five ply Rubber Belts, or heavy double leather Belts; No. 5 for Light Belts; intermediate sizes in proportion.

Price per Box of 100.

Nos. 5	4	3	2	1	0	00
1/-	1/4	1/9	2/3	3/-	3/9	4/6

Solid Round Leather Belting.



1981 We guarantee the Belting to be made from best Oak Bark Tanned Butts. Stretching is reduced to a minimum.

Sizes	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{3}{8}$
Price per foot	1d.	1½d.	2d.	2½d.	3½d.	5d.

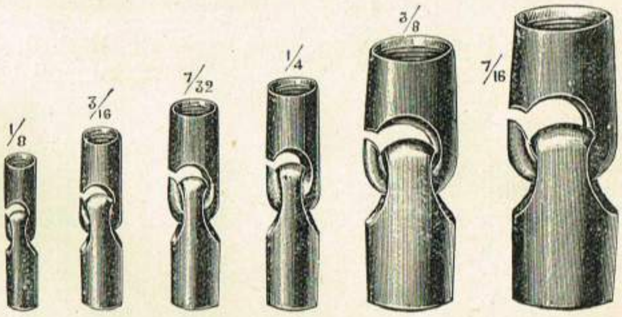
Gut Bands, and Hooks and Eyes for Gut Bands.

1982 Gut Band, Best Quality—

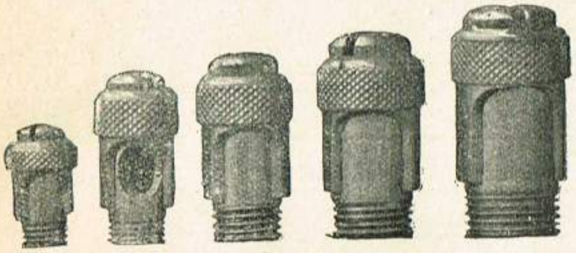
$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$in.
2d.	3d.	4d.	5d.	6d.	8d. pair.
$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$in.
9d.	1/2	1/4	1/9	2/6	3/- per yd.

1983 Hooks and Eyes for Gut Band—

$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$in.
4d.	4d.	5d.	5d.	6d.	7d. pair.
$\frac{1}{4}$	$\frac{9}{32}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$in.
7d.	8d.	9d.	1/-	1/4	1/8 pair.



Universal Dust-proof Oil-hole Covers.


No. 1.
No. 2.
No. 3.
No. 4.
No. 5.

1984 They are readily attached by a screwdriver. The cap is held on by a spring, which holds it secure but allows it to turn easily by the fingers.

They are made in the five sizes listed. They are well proportioned, neatly finished, and have large oil-holes into which the spout of the oil-can is readily inserted, and in case it should not deliver freely the fact can easily be observed. All sizes have a broad knurled surface on the cap, by which they are easily turned with the fingers.

Nos.	0	1	2	3	4	5
Sizes of Threaded Body	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$
Numbers of Threads	32	32	32	24	24	24
Diameter of Caps	$\frac{5}{16}$	$\frac{11}{32}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$
PRICES, Nickel-plated ... ... per doz.	3/9	4/-	4/6	4/9	6/-	8/-
Special Taps for ditto ... ... each	1/6	1/9	2/-	2/2	2/4	2/9

Dust-proof Oil-hole Covers are made of rolled brass and finely nickel-plated.

Hide-Faced Hammers.

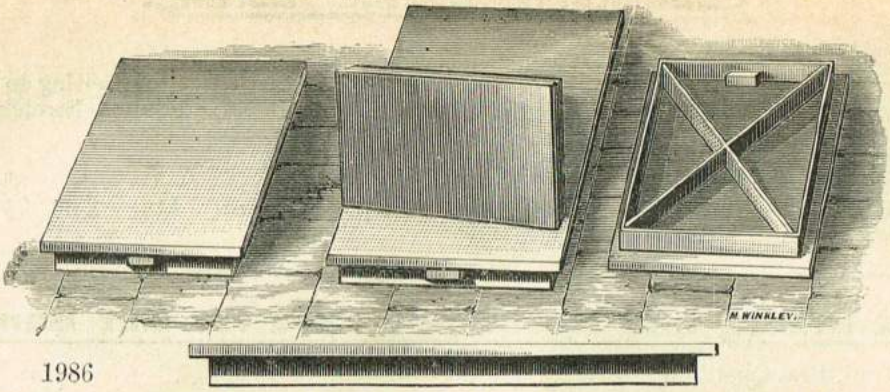
1985 These Hammers are invaluable for Engineers, Workers in Brass or Silver, Jewellery Manufacturers, or for anyone who wishes to strike a hard blow without bruising the material.

One pair of extra faces is sent with each hammer, and when worn out they can be renewed at slight cost, the old ones being easily removed by fastening the hammer in a vice, when a few blows on the side of the face will usually knock it out. If worn down very much a cold chisel may be necessary. The new faces need no fastening except a tight fitting in the shell.

PRICES—Including One Pair of Extra Faces.

No.	Weight.	Each.	Extra Faces per pair.
1	1lb.	3/9	10d.
2	1½lb.	4/9	1/-
3	2lb.	5/9	1/3
4	4lb.	8/3	1/9
5	5½lb.	11/6	2/6

Engineers' Surface Plates.



1986

Cast Iron, Sound, Strong, Handy, Well Ribbed, Planed True on Face and Edges, for General Commercial purposes.

PRICES.

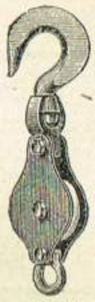
	£	s.	d.		£	s.	d.
10in. by 4in.	0	18	6	18in. by 15in.	3	2	6
9in. „ 9in.	1	5	0	18in. „ 18in.	3	15	0
12in. „ 8in.	1	11	6	24in. „ 18in.	4	7	6
12in. „ 12in.	1	17	6	24in. „ 24in.	5	0	0
20in. „ 8in.	2	3	6	36in. „ 24in.	7	10	0
18in. „ 12in.	2	10	0	36in. „ 36in.	11	0	0

PRICES, SCRAPED.

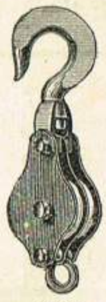
	£	s.	d.		£	s.	d.
10in. by 4in.	1	5	0	18in. by 15in.	4	7	6
9in. „ 9in.	1	17	6	18in. „ 18in.	5	0	0
12in. „ 8in.	2	3	6	24in. „ 18in.	6	5	0
12in. „ 12in.	2	10	0	24in. „ 24in.	7	10	0
20in. „ 8in.	3	2	6	36in. „ 24in.	10	0	0
18in. „ 12in.	3	15	0	36in. „ 36in.	15	0	0

Pulley Blocks with Iron Sheaves.

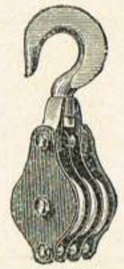
Best London-made Rope Blocks.



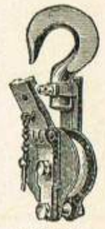
1987



1988



1989



1989a

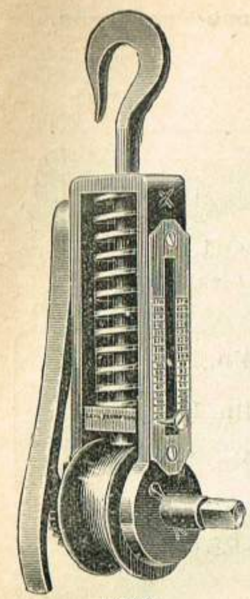
				2	2½	3	3½	4	4½	5	6	7	8in.	
1989a	Snatch Blocks		...	—	—	16/-	19/-	22/-	26/-	30/-	35/-	45/-	58/-	each.
1987	1. Sheave	„	...	8/-	8/6	9/-	11/6	14/6	17/6	20/-	31/6	38/-	50/-	„
1988	2. „	„	...	9/-	10/-	11/6	14/-	18/-	21/-	23/-	37/-	50/-	76/-	„
1989	3. „	„	...	10/-	11/6	14/-	18/-	21/-	27/-	29/-	50/-	63/-	100/-	„

The above can be supplied with Brass Sheaves if so required, at an advanced cost of about 20 per cent.

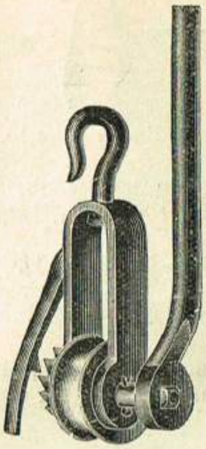
London Pattern, Country-made.

			2½	3½	4	4½	5	6	7	8in.	
Snatch Blocks		...	3/6	3/9	4/6	5/3	7/6	9/-	11/-	14/-	each.
1. Sheave	„	...	2/6	3/-	3/9	5/3	6/6	7/6	9/6	12/6	„
2. „	„	...	3/6	5/-	5/9	7/3	9/6	11/-	16/-	22/6	„
3. „	„	...	4/6	5/9	7/3	9/6	12/6	14/6	21/-	30/-	„

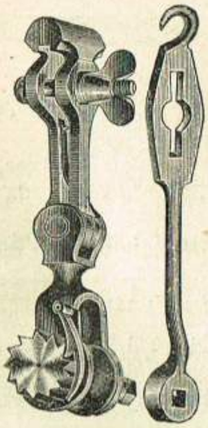
Linesmen's Tools.



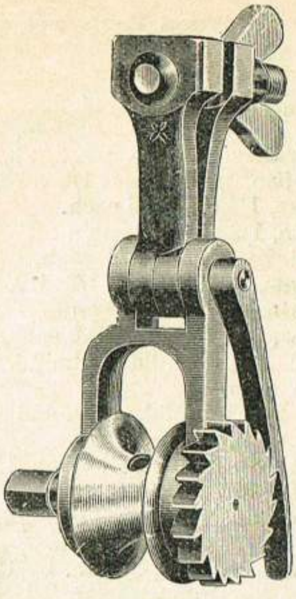
1990



1991

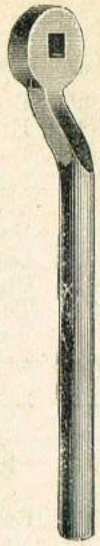


1992



1993

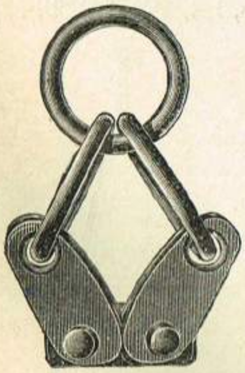
1994



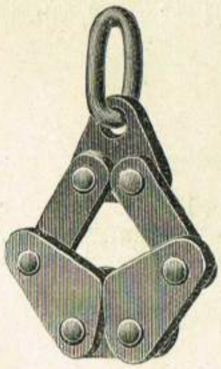
1995

1990	Tension Ratchets, to indicate up to 170lb.	20/- each.
1991	Ratchets for Draw Tongs, with Key, 8/6 each. Lighter made ditto	5/- „
1992	Draw Vice, with Ratchet, Hand Vice Jaws, regular pattern, with Keys, length of Hand Vice 4in. 16/-, 4½in., 17/-, 5in. 18/-, 6in.	22/- „
1993	Solid Steel Draw Vice, with Ratchet	20/- „
1994	Keys for either Nos. 1992 or 1993	2/- „
1995	Ditto 1990 or 1991	1/6 „

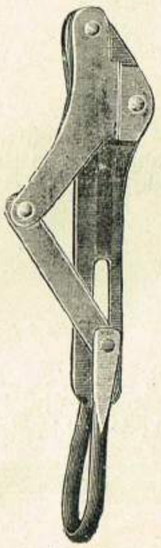
Keys are not included in above prices except where specially mentioned.



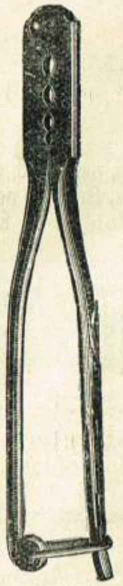
1996



1997



1998



2001

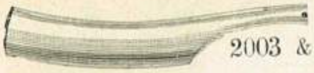
1996	Chain Draw Tongs	4/9 each.
1997	Dutch Draw Tongs	4/9 „
1998	Sliding Draw Tongs	4/9 „
1999	Ditto, with Curved Jaws	5/3 „
2000	Ditto, with Curved Copper Jaws	6/- „
2001	Steel Connecting Pliers, 10in....	3/6 pair.

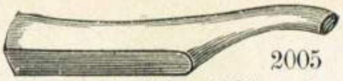
2002 Pole Climbing Irons, complete with Straps and Pads ... ... 12/6 per pair.

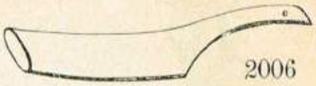
For other Linesmen's and Telegraph Engineers' Tools see General Index. Prices for complete outfits will be quoted on receipt of specification.

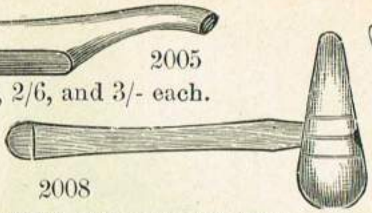
Plumbers' Tools.

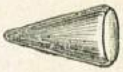
All our Plumbers' Wood Tools are of the Best Make and most approved patterns.


2003 & 2004


2005


2006


2008


2011

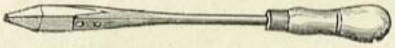
2012

2003 Boxwood Dressers, 1/3, 1/6, 1/9, 2/-, 2/3, 2/6, and 3/- each.
2004 Hornbeam Ditto, 1/-, 1/3, and 1/6 each.
2005 Bossing Sticks, 1/3 and 1/6 each.
2006 Bending Ditto, 1/6 and 1/9 each.
2007 Setting-in Sticks, 1/3 and 1/6 each.
2008 Bossing Mallets, 9d., 1/-, 1/3, 1/6, 1/9, and 2/- each, all with Malacca cane handles.
2009 Large Stretching Mallets, 2/6 and 3/- each.
2010 Chase Wedges, 6d., 7d., 8d., 10d. each. Hooped Wedges, 1/- and 1/3 each.
2011 Turnpins, 1in. 2d., 1¼in. 3d., 1½in. 4d., 2in. 5d., 2½in. 8d., 3in. 10d., 3½in. 1/2, 4in. 1/6, 4½in. 2/3, 5in. 3/- each.
2012 Bobbins, 1in. 2d., 1¼in. 3d., 1½in. 4½d., 2in. 6d., 2½in., 9d., 3in. 1/-, 3½in. 1/3, 4in. 1/6, 4½in. 2/3, 5in. 3/- each.
2013 Turned Brass Bobbins or Followers, 1in. 1/-, 1¼in. 1/4, 1½in. 1/8, 2in. 2/8, 2½in. 3/9, 3in. 7/-, 3½in. 10/-, 4in. 14/- each.
2014 Plumbers' Lignum Mandrils, 1½in. 1/6, 2in. 1/9, 2½in. 2/6, 3in. 3/-, 3½in. 3/6, 4in. by 12in, 4/-
2015 " " " 1½in. 2/-, 2in. 2/6, 2½in. 3/-, 3in. 3/6, 3½in. 4/-, 4in. by 15in. 4/9.
2016 Reducing Mandrils, 1½in. by 2in. by 15in. 3/-, 2in. by 2½in. by 15in. 3/6.
2017 Malacca Canes for Dummies, 3d., 4d., 6d. each.
2018 Bend Bolts all Steel, 12in. 1/6, 14in. 1/9, 16in. 2/-
2019 Drip Plates 9d. each.
2020 Fixing Points, Steel, 12in. 8d., 15in. 10d., 18in. 1/-
2021 Copper Soil Pots, 2/- each.

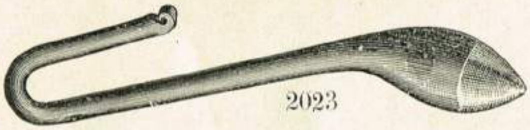
2019

2010

2021

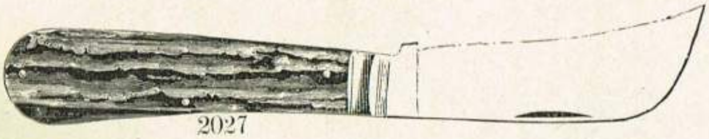


2022 Copper Bit Soldering Irons, 1/-, 1/3, 1/6, 1/9, 2/-, 2/3, and 2/6, over 1½lb. in weight, 1/3 per lb.

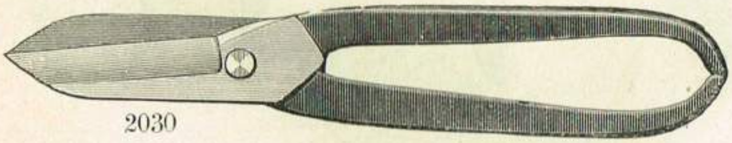

2023

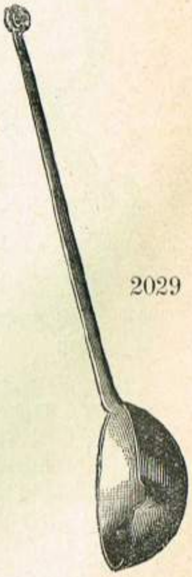
2024

2023 Plumbers' Irons, 6d. per lb.
2024 Shave Hooks, straight or bent heart shape, and three-square, 9d. each.
2025 Shave Hooks, Soil Pipe or Gauge Shave Hooks and Spoon Hooks, 1/- each.
2026 Plumbers' Hammers, 8oz. 11d., 10oz. 1/-, 12oz. 1/1, 14oz. 1/2, 1lb. 1/3, 1¼lb, 1/6, 1½lb, 1/9, 2lb, 2/3.


2027

2027 Folding Draw Knives 1/3, 1/6, and 2/-. Chipping Knives 1/3 and 1/6 each.
2028 Strong Cast Plumbers' Pots, 5in. 1/-, 6in. 1/6, 7in. 2/-, 8in. 2/6 each.
2029 Wrought Iron Ladles, 3in. 6d., 4in. 9d., 5in. 1/-, 6in. 1/6 each.

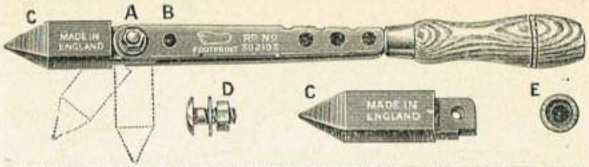

2030

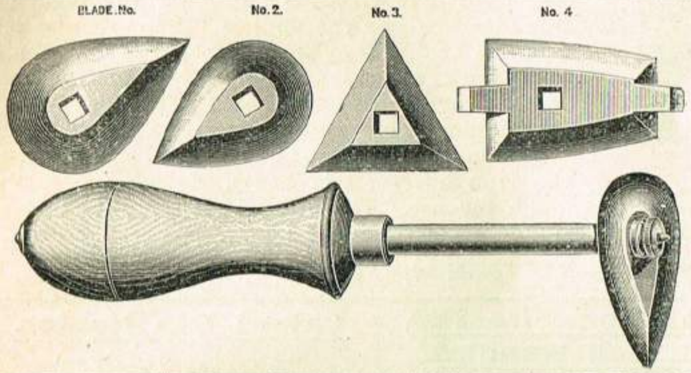

2029

2033

2030 Tinmen's Snips 6in. 1/4, 8in 1/9, 9in. 2/-, 10in. 2/3, 12in. 3/-, 14in. 4/- per pair.
2031 Ditto Bent Blades 10in. 3/3, 12in. 4/- per pair.
2032 Improved Ball-end Blow-pipes 6in. 4½d., 8in. 5d., 9in. 6d., 10in. 7d. each.
2033 New pattern Cast Steel Wall Drills, 12in. 1/6, 14in. 1/9, 16in. 2/-, 18in. 2/3 each.
2034 Self-skimming Solder Ladle, No. 1, ¼lb. 1/-, No. 2, 1¼lb. 1/3, No. 3, 4¼lb. 6/- each.

2035 Improved Adjustable Copper Bit Soldering Irons, 1/3, 1/6, 1/9, 2/3, 3/- and 3/6 each.





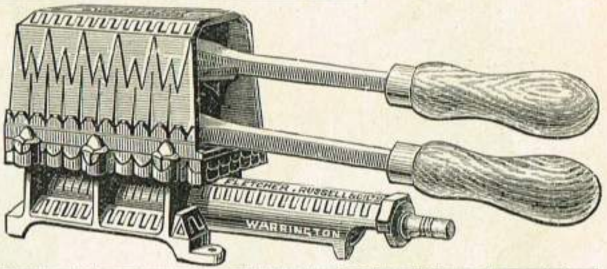
2036 Improved Pattern Plumbers' Shave Hooks, with Set of 4 Blades.
Price 2/6 complete.

Extra Blades, Nos. 1, 2 and 3, 6d. each.
,, ,, No. 4, 8d. ,,

Improved Gas-heating Soldering Iron Stove.

2037 This Stove will heat one bit and keep another nearly ready for use, so that the two can be used in succession.

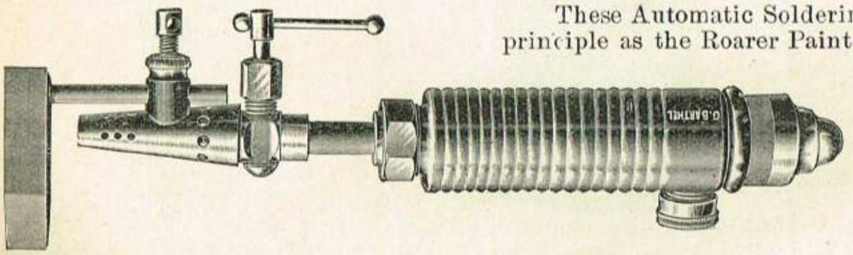
Price 3/6 each.

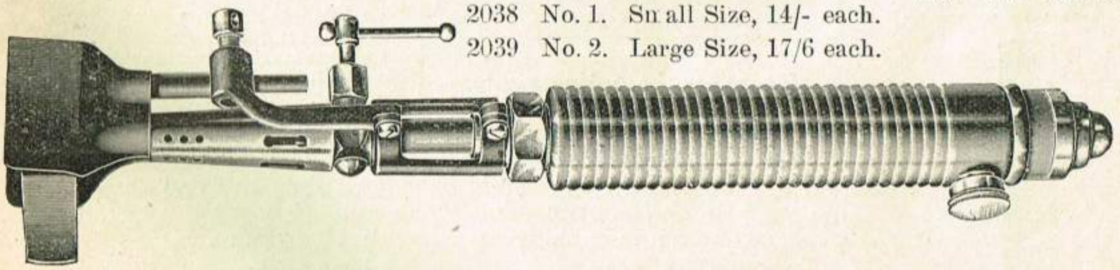


Automatic Soldering Irons,

For Benzoline.

These Automatic Soldering Irons are made on the same principle as the Roarer Paint Removing and Brazing Lamps. They are perfectly safe in use, explosion being impossible. Their construction is most simple, and they are well adapted for out-door work, on roofs, etc., and are very much safer and more convenient than the old-fashioned fire pot. By removing the copper bit they can be used either for paint removing or brazing.



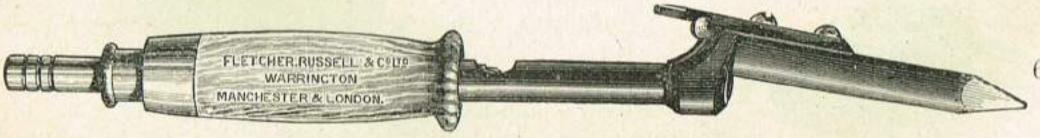


2038 No. 1. Small Size, 14/- each.
2039 No. 2. Large Size, 17/6 each.

Improved Registered Self-heating Soldering Bit.

This is free from smell, heats rapidly, and will be found a first-class arrangement for case-makers, stained glass leading, sardine box making, and similar work.

2040



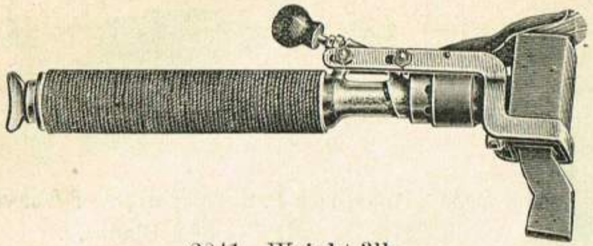
Price, 6/- each.

The copper can be renewed in a minute when worn down. The gas supply from an ordinary bracket, with the gas burner removed, will be found ample.

Plumbers' Tools—*continued.*

The "Phœnix" Soldering Iron.

Heated by Benzoline.

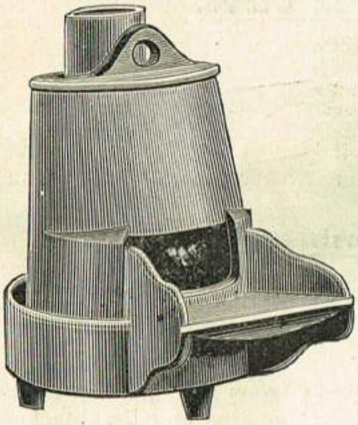


2041 Weight 3lb.

These Soldering Irons are without pump and on the same principle as "The Swedish" Blowlamps, the handle being the container of the Benzoline, and the flame, which can be regulated to a nicety, keeps the copper bit at a regular and uniform heat. They are indispensable for all outdoor work where it is inconvenient and troublesome to have a coal fire or heating furnace burning, also for small jobs in the workshop. The handle holds about half a pint of Benzoline, and will keep the Iron hot for two hours. It takes only five minutes from the first start to have the Irons hot enough for use. These Irons are Wind- and Rain-proof, they are very economical in use, and save a great amount of time and labour.

Price, with Box of Reserve Parts, 14/6 each.

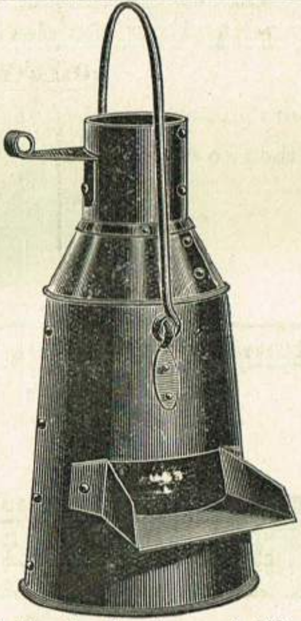
Cast Iron Fire Pot, for Charcoal.



2042 Improved Pattern ; very durable.

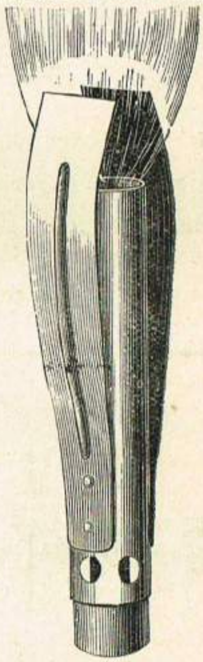
12/6 each.

Sheet Iron Fire Pot, with Bail Handles.



2043 Small—for charcoal, 4/6 each.
2043A Large Size Ditto, with Legs for Coke, 6/6 each.

Patent Gas Heater.



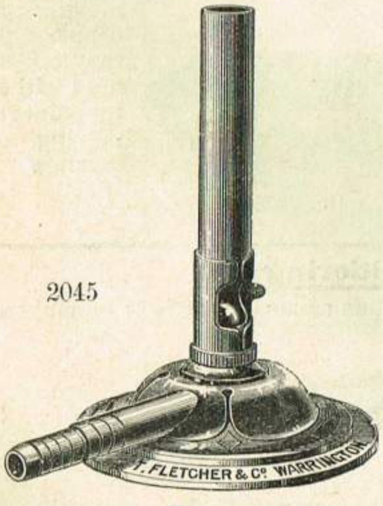
2044

For tempering Drills, etc.

With this Gas Heater, a Bar of Steel, $\frac{1}{2}$in. diameter, can be made red hot in six minutes, and in two minutes a $\frac{1}{4}$in. bar can be heated sufficiently to be hardened.

Price 3/6 each.

Bunsen Burners.



2045

These are the ordinary Brass Tube Bunsen. They are correctly proportioned in every detail, and of the full theoretical power, working up to their maximum calculated duty in every case. All are screwed for $\frac{3}{8}$in. connection. The number gives the maximum gas consumption in cubic feet per hour at $\frac{10}{10}$ pressure.

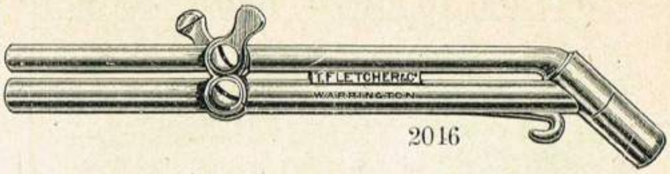
Number	3	5	6	8	12
Size of tube outside	$\frac{3}{8}$in.	$\frac{7}{16}$in.	$\frac{1}{2}$in.	$\frac{5}{8}$in.	$\frac{3}{4}$in.
Height without stand ...	$3\frac{1}{2}$in.	$4\frac{1}{4}$in.	5in.	6in.	7in.
Price each without stand...	8d.	10d.	1/-	1/3	1/6
Price on brass stand	2/-	2/3	2/6	3/-	4/-

If fitted with Screw Adjustment for Gas, 1/- extra.

All have air-slides ; these enable the smaller sizes to be used with a blow-pipe without the necessity of a loose internal tube.

Heavy round brass stands ONLY are supplied. The objectionable nature of iron stands on a laboratory table is too well known to need any remark. The stand increases the total height about 1in. They can be supplied in clusters of 3, 4, 7, or 12 burners, or mounted on tubes, in any form.

Improved Gas Blow-pipes.



2016

The power of any blow-pipe, with a sufficient gas supply, depends entirely on the pressure of air used. Quick, short heats cannot be obtained with a fan or smith's bellows, and an air pressure of not less than 1lb. per square inch is strongly recommended when it can possibly be obtained. With an air pressure of 1lb. per square inch the ⅜in. size will braze up to the size of an ordinary latch key or ½in. brass tubing. The ½in. size, up to light bicycle frames or ¾in. iron steam pipe. The ¾in. size will braze the heaviest tricycle work or up 1½in. iron steam tubing.

Sizes.		Prices. With Taps.	Prices. Without Taps.
8C No. 1.	⅜in. size for ⅜in. gas supply	9/-	4/3 each.
,, 2.	½in. ,, ½in. ,, ...	13/-	7/- ,,
,, 3.	¾in. ,, ¾in. ,, ...	—	15/- ,,

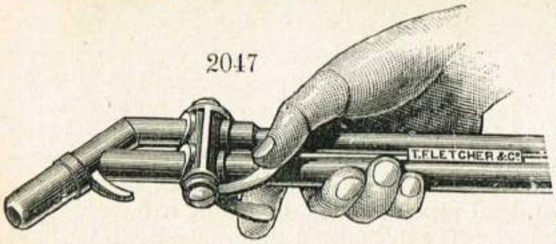
Our Foot Blower, No. 3 size, will work the ⅜in. size Blowpipe at full power. The No. 5 size will work either of the three sizes.

Spelter for Brazing, 1/6 per lb.

Automatic Blow-pipe.

This will be found a simple and most efficient blow-pipe for ordinary workshop use. Both gas and air are controlled by a movement of the finger, a few minutes' practice giving perfect mastery over the character of the flame.

2047



C 10. Small size, for fine light work, taking air jets not exceeding ⅛in. bore. Price 9/-. The same blow-pipe on Stand, 12/6. Stock size 8½in. long. This requires Foot Blower No. 3 size.

C 40. Medium size, for small workshop use, key brazing, copper gas pipe up to ¾in., etc., taking air jets not exceeding ¼in. bore. Price 11/6. The same blow-pipe on Stand, 17/6. Stock size 12½in. long. This requires Foot Blower No. 5 size and ¼in. clear bore gas supply pipe.

C 80. Large size Injector pattern, will braze ½in. thick flange on 1½in. wrought-iron pipe and copper cylinders up to 2lb. square foot. Price 18/-. Stock size 16½in. long. This requires at least ¾in. clear bore gas supply, and Foot Blower No. 5 size.

The number gives approximately the gas consumption per hour at full power.

These are adjusted to work only with our Foot Blowers, or others giving an air pressure of 1lb. to 1¼lb. square inch.

Foot Blowers.

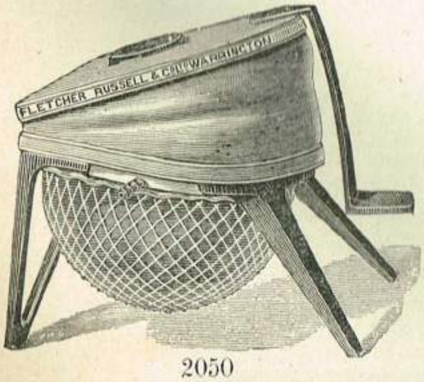
2048

These are the only Foot Blowers giving absolutely steady air pressures in all positions. No. 3 is the most useful size for blowpipe work, and is generally used for the soldering of lead chambers, being worked by the foot or under the arm, as most convenient. No. 5 for the larger injector furnace, and for large blow-pipes. All patterns supply the air at a pressure of about 1¼lb. on the square inch. These blowers have proved themselves to be efficient, simple, strong, and able to stand hard and constant work.

			Size over all, including step and air pipe.	Pressure in inches in water.	Pressure in ounces.	Size of air pipe.
2048	Size No 3.	Price 26/-	13 by 10 by 6½ deep ...	36in. ...	20oz. on sq. in. ...	⅜in.
2049	Size No. 5.	Price 33/6	15 by 12 by 7 deep ...	36in. ...	20oz. on sq. in. ...	⅜in.

Diameter of Air Reservoir, No. 3, 8in.; No. 5, 10in.

Improved Pattern.


FLETCHER RUSSELL & Co. L. WARRINGTON

2050

2050 Prices—No. 3, 30/6; No. 5, 36/6 each.

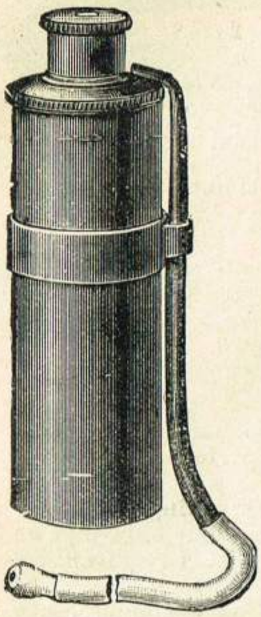
This pattern, by reversing the position of the blower, reduces the risk of mechanical injury to the disc, and does away with the necessity for a wood casing or protection. It also prevents the valve from picking up dirt from the floor, keeping the whole arrangement cleaner, and the valves in more perfect order. Sizes as 2048 and 2049.

Extra Rubber Discs for No. 3, 2/8 each; Nets, 1/-.

For No. 5, 4/- each; Nets, 1/4 (2 rubber discs used on each blower).

Plumbers' and Painters' Blow-lamps.

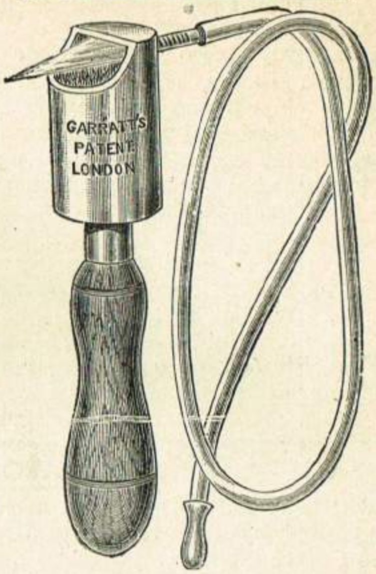
"Multum in Parvo" Spirit Lamp and Blow-pipe.



2051 This will be found a most handy and useful article for Gas-fitters, Plumbers, and all who are constantly using a blow-lamp. It is fitted with a flexible indiarubber tube and mouthpiece, enabling it to be readily used in many places where it would be difficult or impossible to work with an ordinary Blow-pipe. It can also be used with advantage as a torch or light when working in dark places, by unscrewing the loose top. To charge the lamp, fill the cylinder with lamp-cotton or cotton-waste, and saturate the same with methylated spirit for light work; for heavy work benzoline can be used. The blow-pipe can be adjusted to any height by pulling up the slide.

Double Top ...	...	...	...	3/6 each.
Single Top ...	...	...	...	2/6 „
Without Top ...	...	...	...	1/6 „

Garratt's Patent Plumbers' Blow-lamp for Benzoline.

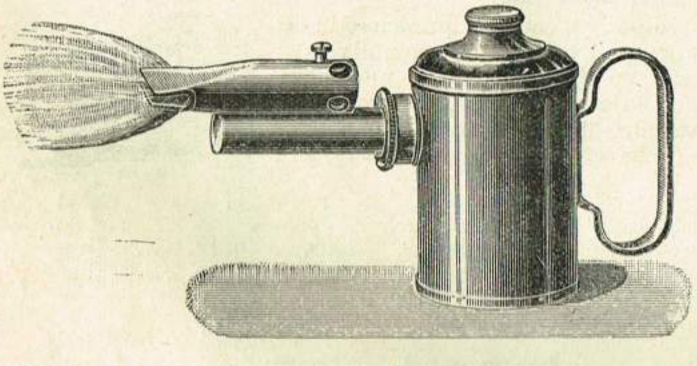


Garratt's Patent Blow-pipe.

2052 The above illustration represents a new kind of Blow-pipe for making small joints in compo pipe, and for general use. It far supersedes the old-fashioned Blow-pipe and Rushes, being cheaper, cleaner, and more effective. The flame can be regulated to blow a joint from ¼in. compo to 2in. lead pipe at a cost of about a farthing per six hours. It can be used in any position without fear of explosion, as the spirit is not confined, and, being strong and simple in construction, cannot get out of order.

Small ... 1/6. Large ... 2/6 each.

New Pattern Paint-removing Lamp.

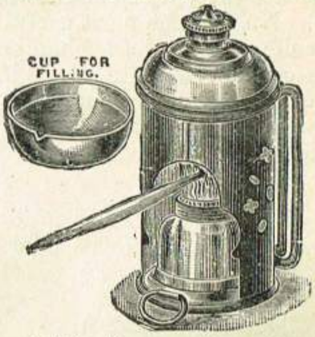


2053 With wide-spread flame for covering larger surface.

Price ... ... 8/- each.

Burns Benzoline.

Improved Self-blowing Paint-removing and Soldering Lamp.

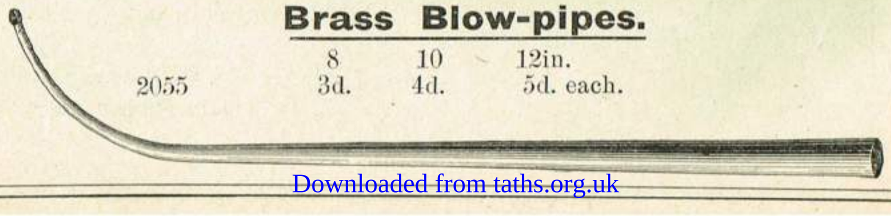

CUP FOR FILLING.

2054 For small work.

Iron Body, with Copper Container, Nos. 1 3/-, 2 3/6, 3 4/-, 4 5/-, 5 6/- each.

All Copper ditto, Polished throughout, Nos. 1 4/6, 2 5/-, 3 5/6, 4 6/6 each.

Brass Blow-pipes.



	8	10	12in.
2055	3d.	4d.	5d. each.

Paint-removing and Soldering Lamps.

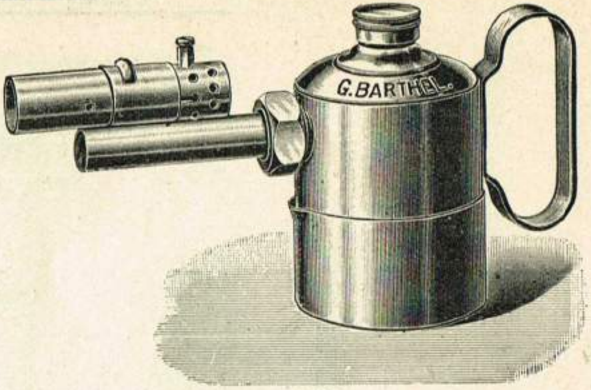
The "Roarer."

For Methylated Spirit.

"Roarer" No. 4, Price 6/6 each.
Flame 3½in. (Cut ½ full size), for fine work.

"Roarer" No. 5, Price 8/6 each.
Flame 5in. (Cut ¼ full size), for ordinary work.

"Roarer" No. 6, Price 10/- each.
Flame 7in. (Cut ⅙ full size), very powerful.



2056

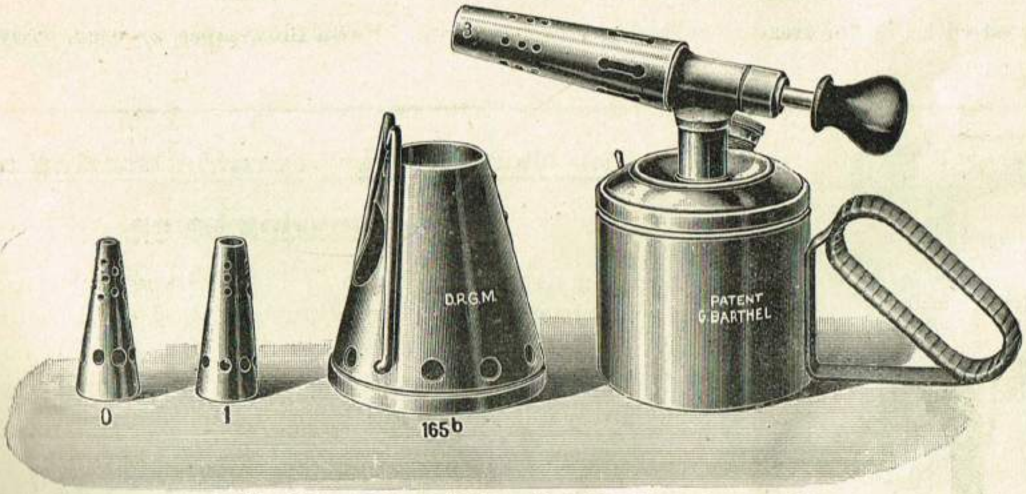
Description of New Type "Roarer."—The lower tube, which is closed at the end, contains the wick which drops internally to the bottom of the container. The upper tube, which acts as the blow-pipe, communicates with the wick tube by a small internal tube, which is pierced with a small hole or nozzle to allow the vapours to escape. The air inlet holes in the upper tube can be regulated by a sliding cap, which is fitted to the tube.

Instructions.—The brass cup which fits on the container holds the correct amount of the *pure Methylated Spirit* necessary to charge the "Roarer." This charge is poured into the container, and the filling plug at top screwed down. In the bottom of the brass measuring cup is a small depression, which is then filled with methylated spirit, and stood under the wick tube and lighted. The vapours then issue from the nozzle inside the blow-pipe, and are ignited; as soon as the flame is sufficiently powerful, the brass cup is replaced on the container.

When renewing the wick, the brass plate must be placed over the inlet to the small internal tube, as this must always be kept clear of wick, and the wick pushed right up to the end of the wick tube.

The "Roarer." Patent Automatic Blow-lamp.

Soldering and Paint-removing Lamp.



2057 The "Roarer," No. 17B, for Benzoline only.

No. 3 Nipple and No. 3 Blow-pipe, 8in. flame, burning 1¾ to 2½ hours, for Plumbers, Painters, Electricians, hard soldering, small work, &c., &c. Price 13/6 each.

Same container takes No. 1 Blow-pipe, 4in. flame, burning 3¼ to 4 hours; for Workshop use and fine work. Price 13/6 each.

And also No. 0 Blow-Pipe, 3in. very fine and pointed flame. Price 13/6 each. For Jewellers, Watchmakers, Dentists, Opticians, soldering lead, fine brazing, &c.; a thorough substitute for the old Blow-pipe.

☛ Unless No. 1 or No. 0 is specified, No. 3 will always be sent.

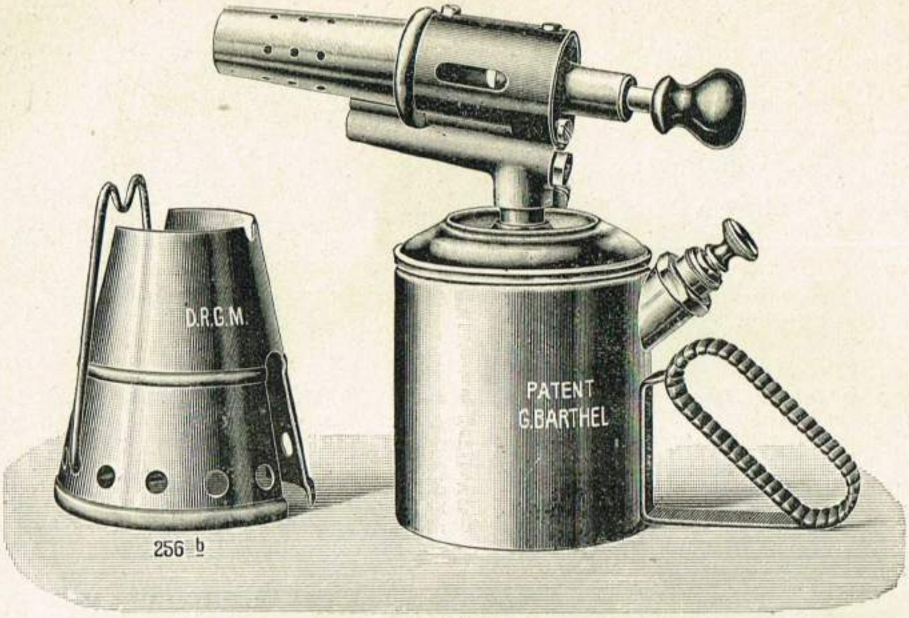
All screw parts are made to gauge; they are interchangeable, and if damaged can be replaced.

Blow-Pipe No. 3	1/3 each.
,, No. 1	1/3 each.
,, No. 0	1/3 each.

Nipples to suit either Blow-pipe, 6d. each.

Special Cap to fit above, for heating Soldering Irons, 1/- each. Coiled Wire Strainers, 1/- doz.

The New "Roarer" Benzoline Brazing Lamp.

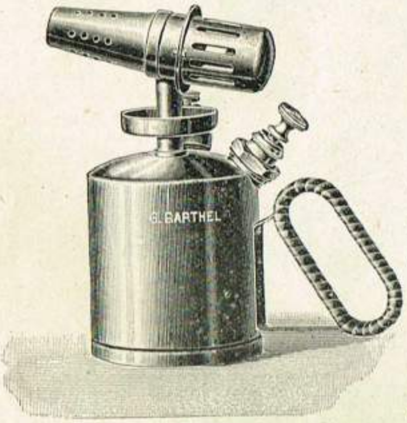


2058

This is the new pattern of the 22B. Lamp, and is a very popular Lamp for general brazing and jobbing work for Plumbers, Electricians, and Cycle Repairers, &c. Cut is about ⅓ size of Lamp.

Price ... ... 24/- each.

If fitted with Cap for Heating Soldering Irons, 1/- extra. Extra Blow-pipes, 2/- each. Nipples for same, 8d. each.



2059

The New "Roarer" Paraffin Brazing and Paint-removing Lamp.

This is a new pattern Lamp of the well-known "Roarer" style, but constructed for use with Paraffin instead of Benzoline. The Lamp is well made, and so constructed that there is no fear of explosion; and for light brazing and general paint removing will be found a very reliable and satisfactory Lamp.

Price ... ... 13/6 each.

With each Lamp are sent 3 Cleaning Needles, 2 extra Washers, and 3 Wire Strainers.

The "Swedish" New Blow-lamp.

The "Swedish," No. 2060, is a New Pattern in reply to numerous enquiries for a cheap and handy Blow-lamp.

The flame can be regulated as in the Original Swedish Blow-lamps. The Handle is detachable. The filling is conveniently done at the bottom of the Lamp, which for this purpose is slightly funnel-shaped. The Lamp is substantial and strong, has a safety valve, and is without doubt the Cheapest, Safest, and Most Practical Blow-lamp on the Market.

Capacity nearly ½ pint. Burns at full flame without attention for 1¼ hours. Length of flame is 8 inches, is intensely hot, and free from smoke or smell.

Price ... ... 7/6 each.

THE "SWEDISH."

2060

Plumbers' and Painters' Lamps—*continued.*

The "Swedish" Blow-lamp.

Burning Benzoline.

The principle of "The Swedish" Blow-lamp is well known throughout the trade, having been in use now for more than twelve years.

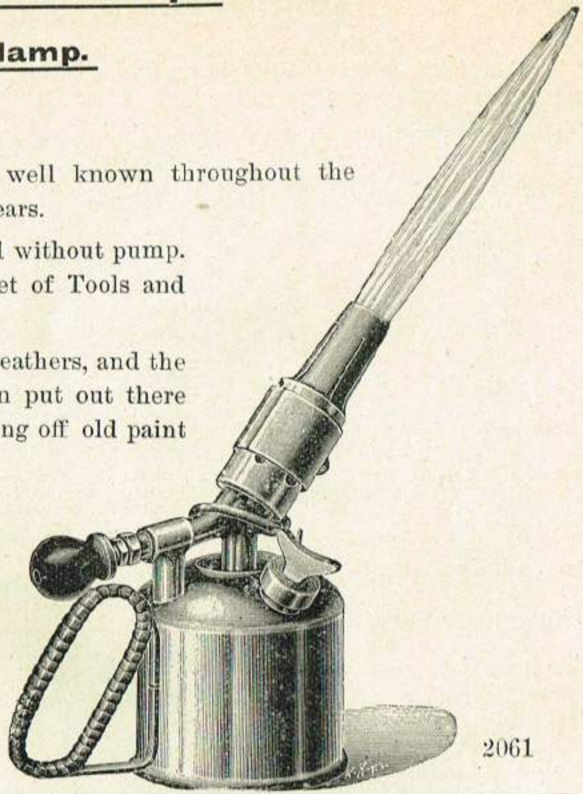
The Lamp is without any complicated burner and without pump. Every part can be taken out and cleaned, and a Set of Tools and Reserve Parts is supplied with each Lamp.

The Lamp will burn in any position and in all weathers, and the size of the flame can be regulated like a gas-jet. When put out there is no escape of oil from the tank. It is used for burning off old paint and varnish, for soldering purposes, for thawing frozen pipes, for hardening tools, &c.

The lamp holds half-pint of benzoline, and will burn with full flame without any attention for one-and-a-half hours.

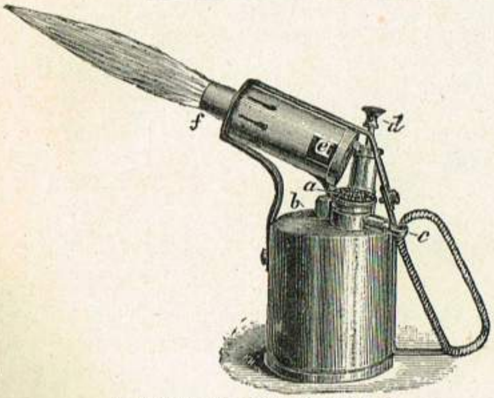
No. 3, with Reclining Burner, as illustrated (½ pint), 11/6 each.

No. 4, with Vertical Burner (½ pint), 11/6 each.



2061

The "Aetna" Brazing Lamp, for Plumbers and Others.



"AETNA" No. 1 and 2.
2062

Burns Paraffin Oil.

The "Aetna" is a Petroleum Brazing Lamp burning without Wick and without Smoke, and the sale has already been enormous. It gives a pure and a very hot flame, registering 2,300 degrees of Fahr. It burns upside down or in any other position, and is not affected by wind or rain. A pint of Petroleum will last three hours. The Flame is as easily regulated as a gas-jet. Every Lamp is tested and warranted perfect. It is used by plumbers for soldering and thawing Frozen Pipes; by Instrument Makers for hardening purposes. It is invaluable for Electricians. For Laboratories it is made with a Straight Burner (No. 3 and 4).

No. 1.	Inclined Burner	To contain	2	pints	15/-
No. 2.	„ „ (usual size)	„	1	„	12/6
No. 3.	Straight Burner for Laboratories	„	2	„	15/-
No. 4.	„ „ „	„	1	„	12/6

The "Vesuvius" Blow-lamp, for Painters and Others.

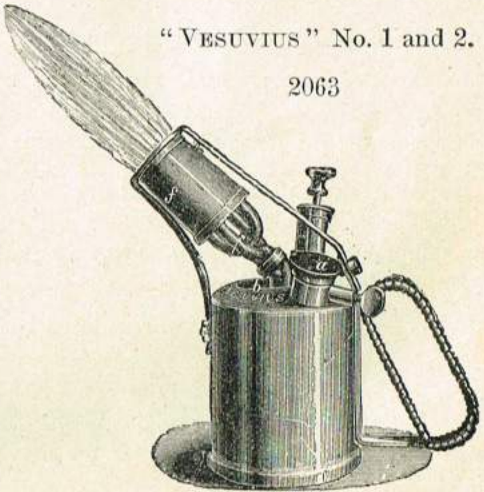
Burns Paraffin Oil.

The "Vesuvius" is a Paint-removing Blow-lamp burning Petroleum or Paraffin Oil without Wick or Smoke. It is very efficient, and will burn off Paint as quickly as it can be followed up with a Scraper. It is not quite so hot as the "Aetna," but gives a broader and very powerful flame greatly valued for many purposes. It will burn in any position, in wet or in stormy weather. Every Lamp has been tested under a high pressure, and is warranted perfect. The Oil Gas is only formed in the Burner, and the Tank contains nothing but Oil and Compressed Air, explosion is therefore impossible.

No. 1.	Inclined Burner	To contain	2	pints	15/-
No. 2.	„ (usual size)	„	1	„	12/6
No. 3.	Straight Burner for Laboratories	„	2	„	15/-
No. 4.	„ „ „	„	1	„	12/6

"VESUVIUS" No. 1 and 2.

2063



Improved Petroleum Brazing Lamps.

Petroleum has, as a burning material for brazing and soldering lamps, undoubtedly two great advantages over its competitors, benzine and methylated spirit.

FIRST: Being comparatively less dangerous than benzine and methylated spirit.

SECOND: Petroleum may be had everywhere, but not so benzine. Besides these two chief points, another one is that the use of Petroleum is much cheaper than the use of benzine or methylated spirit,

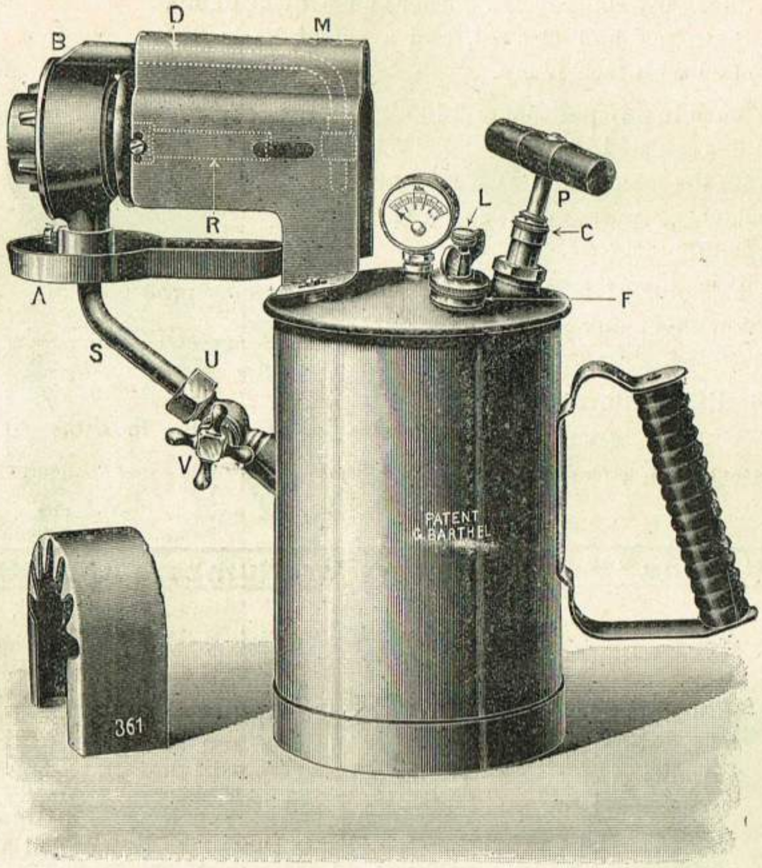
2064

No. 1.

Length of Flame 12in. Holding 1 quart of Petroleum. Burning about ⅔rds of an hour at a pressure of 4 atmospheres, or 1⅓ hours at a pressure of 2 atmospheres.

PRICE:

32/6 EACH.



2065

No. 2.

Length of Flame 20in. Holding 3 quarts of Petroleum. Burning about 1 hour at a pressure of 4 atmospheres, or 1⅔ hours at a pressure of 2 atmospheres.

PRICE:

45/= EACH.

These Improved Lamps are very much more powerful than the former patterns, which they have replaced.

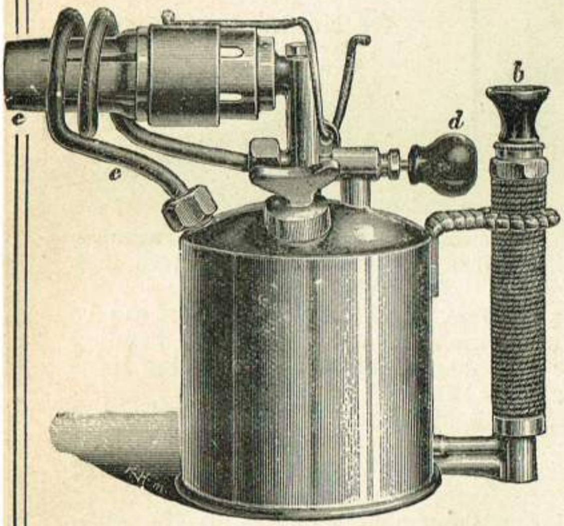
Directions for Use of the Petroleum Brazing and Soldering Lamps, Size 1 and Size 2.

1. Fill the container three-quarters full with petroleum, but never with benzine.
2. Screw the plug of the feed-hole tightly down after filling.
3. Press the regulator until the hand of the manometer points to 1½ by Lamp Size 1, and 2 by Lamp Size 2.
4. Fill the little bin underneath the nozzle with spirit and light it at a calm not draughty place.
5. Before the extinguishing of the flame, open the valve slowly and carefully until the vapour of the petroleum is alight, then close the valve at once so far that only a very small flame is burning.
6. After the extinguishing of the flame, open the valve slowly, until a full and steady flame appears, but no further.
7. The flame can be regulated by means of the valve, and can be extinguished by closing the valve.

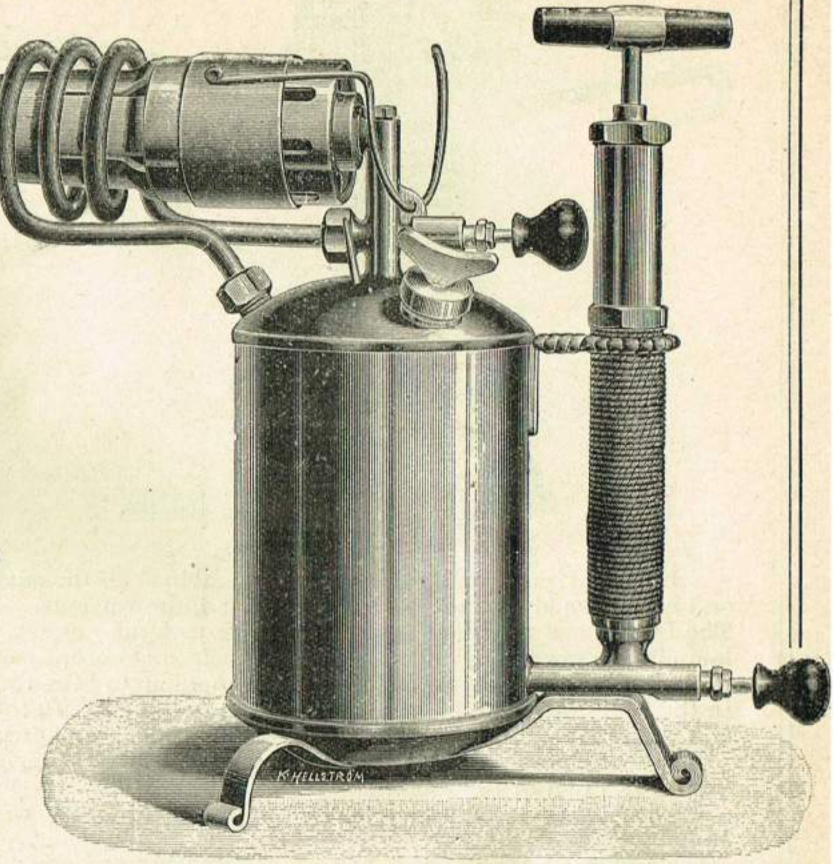
TELEPHONE NUMBER.—Our Telephone Exchange Number is Hop 1023, and all our stores are also connected with one another by private telephone.

The "Invicta" Benzoline Brazing Lamps.

The "Invicta" No. 1 is specially for Cycle Brazing Work.



2066 "Invicta" No. 2.



2067 "Invicta" No. 1 & 0.

The "INVICTA" burns BENZOLINE.

The "Invicta" lamps are constructed for Brazing Work on a large scale. They fill the highest expectations that can be placed in a brazing lamp, and they are very suitable for out-door work, even in very windy weather.

"Invicta" No. 2 has a flame 9in. long, and will do all small ordinary brazing jobs. One filling (2 pints) will last one hour with full flame, but the flame may be regulated so that the same quantity of Benzoline will last five or six hours.

"Invicta" No. 1 is intended for large brazing jobs, and is especially suitable for use in **Copper Works, Cycle Works, Cycle Repairing Shops** and **Shipyards** (for taking off propellers, burning off old paint from vessels), etc.

The mouth of its burner-tube is 1½in. in diameter, and it gives a flame 18in. long. It will melt a copper rod ½in. thick in three minutes.

One filling (4 pints) will last about one hour and a quarter at full flame, but the flame may be regulated so that the same quantity of Benzoline will last five or six hours.

"Invicta" No. 0 is like No. 1, but larger and still more powerful.

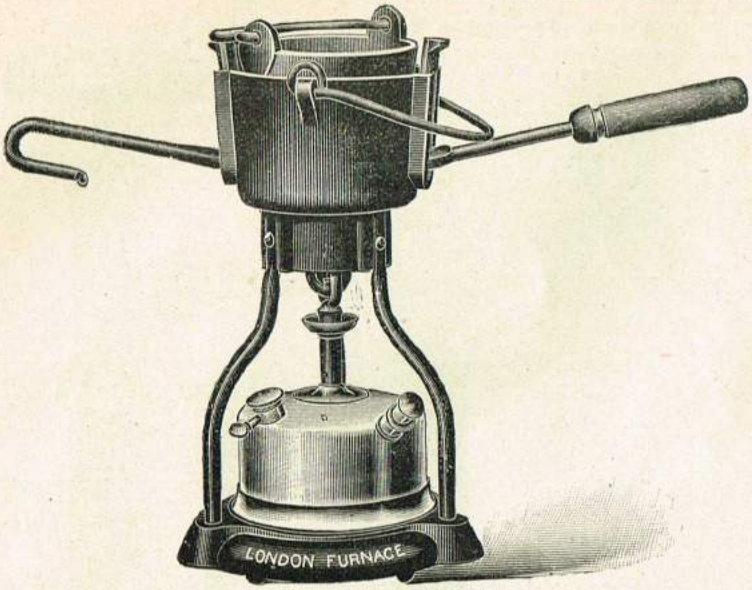
The mouth of the flame-tube is 2in., and it gives a flame 21in. long. The capacity of the tank is 6 pints. It is for brazing jobs on a very large scale.

The "INVICTA."	No. 2	No. 1	No. 0
Capacity in pints	2	4	6
Weight, about lb.	3¾	7½	11½
PRICE, each	22/6	55/-	67/6

These Prices include a Box of Reserve Parts and Repairing Tools.

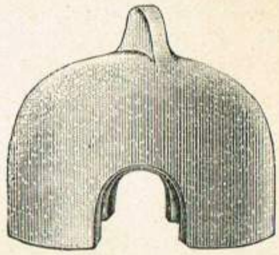
"London" Furnace.

For Universal Use.



2068 Burns Paraffin.

Fire Clay Cover.



for Heating and Bending Iron Pipes. 1/- extra.

In the "London" Furnace we have combined all the advantages introduced in our other furnaces, and have been able to make several further improvements. The furnace is supported by three legs. The Lamp itself is of Brass, and of the same pattern as used with the "New Hekla." The burner of this lamp is of a new type, and equally as powerful as two ordinary burners. The lamp stove itself can be taken out for cleaning, repairs, etc. Iron pipes up to $1\frac{1}{2}$in. (inner diameter) can be heated for bending in the flame while the lead is being melted in the pot. In the same manner Plumbers' Soldering Irons and Copper Bits can be introduced by the side doors, as shown in the illustration.

Result of Experiments.—26lb. of Plumbers' Metal was melted in 9 minutes. $1\frac{1}{4}$in. Steam Pipe red hot for bending in 10 minutes.

Capacity.—Tank holds $3\frac{1}{4}$ pints of Paraffin. One filling will last for $2\frac{1}{2}$ hours. Pot holds 26lb. of Plumbers' Metal.

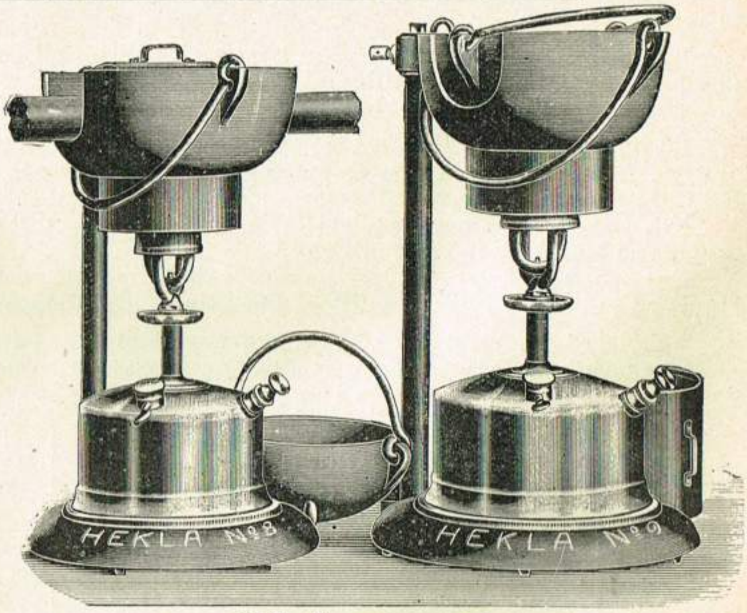
Guarantee.—Every Stove is perfect. Flame atmospheric blue, without smoke or smell. No wick. Burns Paraffin or Petroleum. Every Stove is tested under very high pressure.

Price, Complete with Melting Pot (without Soldering Irons)	38/6 each.
„ of Fire Clay Cover for Heating Pipes	1/- „

The "New Hekla" Improved Portable Street Furnace.

The "New Hekla" is decidedly the most perfect Street Furnace on the Market. The "New Hekla" is warranted to burn the Paraffin Oil in form of Gas, without the slightest Smoke or Smell. The Flame is enclosed, and is not affected by wind or rain. It is very substantial and can be easily carried about. It is easily lighted, and the size of the Flame regulated like a Gas-jet. It is very economical. Every stove is tested at 25lb. pressure. A Melting Pot and Asbestos-lined Cover is supplied with each stove.

Nos.	8	9
Capacity of Oil Tank ...	$4\frac{1}{2}$	7 pints.
Consumption per hour at full working pressure	2	$2\frac{3}{4}$ „
Weight Complete ...	26	31lb.
Heats Iron Tubes in 8 minutes	$1\frac{1}{2}$	2in.
Melts Lead in 7 minutes	29	40lb.



2069 Very Powerful.

Nos.	8	9
Price, Complete	47/6	55/-

Extra Strong English-made Portable Street Furnace.

Specially suitable for heating pipes for bending purposes and melting metals. Burns Common Paraffin Oil, and will melt 1cwt. of Lead with only one Burner.

This Furnace is fitted with movable Top, so that by taking off Cover on Pipe Bending Furnace and placing on Loose Top, it is immediately converted into machine for Heating Metals.

Always ready for use. Perfectly safe and very powerful. Requires little or no attention.

Specially constructed for Plumbers, Builders, Engineers, Hot Water Fitters, Lead Burners, Electricians, Water, Gas, Railway, Telephone, and Electric Lighting Companies, Shipbuilders, Dockyards, Dentists, etc.

No. 1 Furnace will heat 1in. Pipe ready for Bending, and will heat 10lb. of Metal in 5 minutes.

No. 2 Furnace will heat 1¼in. Pipe ready for Bending, and will heat 16lb. of Metal in 6 minutes.

No. 3 Furnace will heat 2in. Pipe ready for Bending, and will heat 28lb. of Metal in 8 minutes.

No. 4 Furnace will heat 2½in. Pipe ready for Bending, and will heat 56lb. of Metal in 11 minutes.

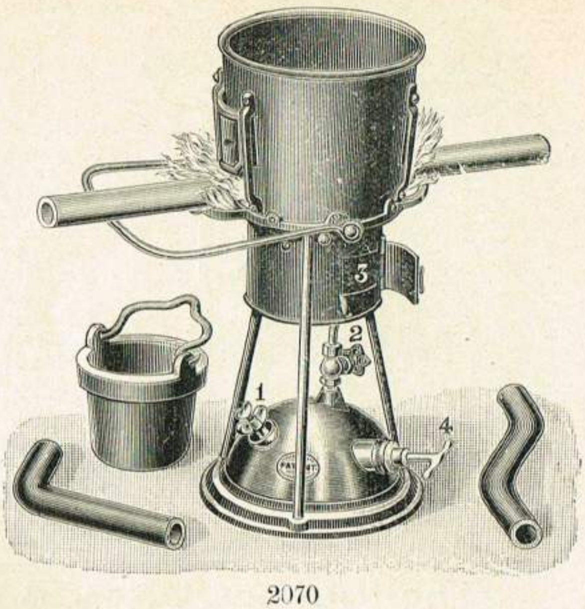
No. 5 Furnace will heat 3in. Pipe ready for Bending, and will heat 1cwt. of Metal in 15 minutes.

No. 6 Furnace will heat 4in. Pipe ready for Bending, and will heat 2cwt. of Metal in 25 minutes.

Price of Furnace, including Metal Pot, Pipe Bending Cover, and Loose Top complete:

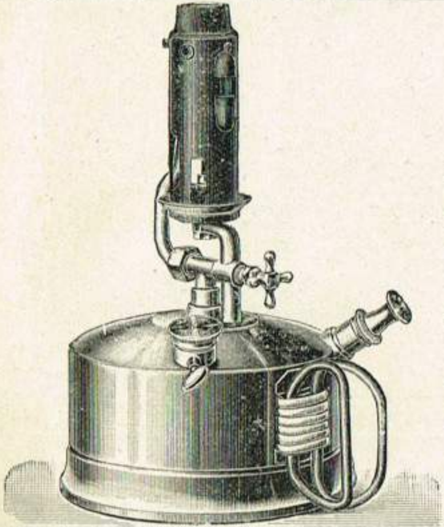
No. 1	£2 17 0	No. 4	£5 0 0
No. 2	3 5 0	No. 5	6 17 6
No. 3	3 12 6	No. 6	8 15 0

The SPECIAL ADVANTAGES are:—It is portable, it can be carried to any place where heat is required, and at once got to work. Each Machine is fitted with valve to regulate flame, so that a lower heat may be obtained, and Metals or Pipes can be kept at any desired temperature for any length of time.



2070

This drawing shows the Furnace suitable for melting Lead, Tin, Solder, Zinc, and other Metals.



2071 "Petrolia" No. 56.

"Petrolia" Paraffin Furnace.

For Motors and Oil Engines.

The "Petrolia" burns ordinary paraffin. It gives a very intense and concentrated heat, and will for instance, melt a ¼in. copper rod when held in the open flame in forty-eight seconds. The lamp is furnished with a valve which regulates and extinguishes the flame without wasting any of the air pressure previously concentrated by use of the pump.

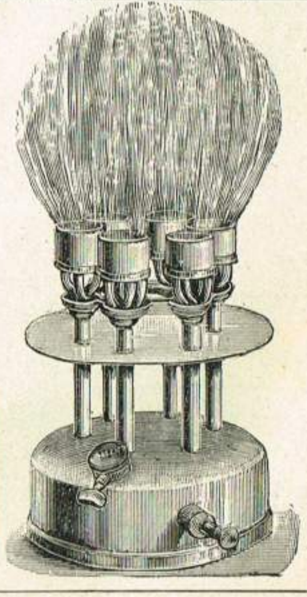
"Petrolia" No. 56 holds 3¼ pints of paraffin. Consumes 2 to 3 pints per hour. Weight 3lb. Height 12in. Diameter 7¼in.

Price ... ... 35/- each.

Made of Brass, Polished.

The "Intensive" Oil Furnace.

Smokeless and Without Wick.

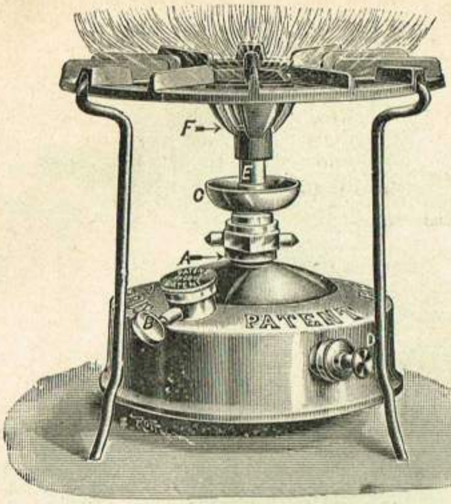


2072

The "Intensive" Oil Furnaces give an enormous heat, and are invaluable for Industrial requirements. They are perfectly smokeless, without wick, and easily carried from place to place. They burn Petroleum or Paraffin Oil, and are in use much cheaper and more powerful than a big coal fire, consuming only fuel to the value of one farthing for each burner per working hour. They are used for steam engines, for melting metals, for heating rivets in ship-yards, and in many other ways. They are perfectly safe, and explosions are impossible. They are made of brass throughout, and are practically indestructible.

No.	2	3	4	6	8
Number of burners Capacity of Tank Size	2 3 pints 12in. by 7in.	3 in a row. 6 pints 12in. by 10in.	4 3 pints 12in. by 7in.	6 6 pints 12in. by 10in.	8 6 pints 12in. by 10in.
PRICE	22/6	37/6	28/6	42/6	48/-

1902. “Phobus.” 1902.



2073

Directions for Use.

Filling.—The tank is to be filled with Paraffin or Petroleum at lid (*A*) three-quarter full.

Lighting.—When the lid (A) is closed and the air-valve (B) opened, fill the little cup (C) under the burner with Methylated Spirit. The spirit will, when lighted, heat the burner. Just before the spirit is burnt out, shut the air-screw, and with a few gentle strokes at D, pump Paraffin from the tank up into the hot burner, when it will be transformed into Paraffin Gas, and this Gas will be ignited by the spirit still burning in the cup, and give a blue and smokeless flame. After another minute the flame can be raised by pumping (up to thirty strokes). When lighting the stove, see that there is no draught. When required, the flame may be lowered by opening the air-valve for a second or two. The flame is put out by leaving the air-valve open.

Cleaning.—Before using the stove the opening at F has to be cleaned with the cleaning-needle delivered with each stove. Use no other needles. It is important that the square iron plate should be kept clean; especially the inner part should be wiped every time before using the stove, to secure a bright and steady flame. Clean the burner-head inside at the same time. If the burner is not hot enough do not pump, as the rising Paraffin cannot be transformed into Gas while the burner is cold. This would cause smoke and smell. Should this mistake be made, the air-valve must be opened at once. Should the leather-packing of the pump get dry, take out the pump rod after unscrewing the pump-lid (D), and put the leather packing in Paraffin. When replacing see that the leather remains smooth. After continual use of the stove it will be found necessary to replace the brass gauze inside the burner tube. Extra gauze is supplied with each stove. **Price 10/6 each.**

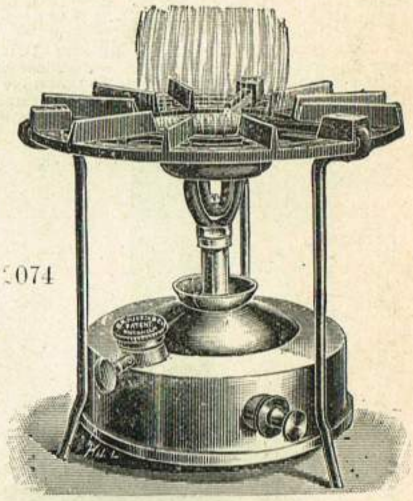
The “Primus,” Nos. 4 and 5.

Burn almost without Noise, and are Self-Igniting.

The “Primus.” Nos. 4 and 5 burn as quietly as a Gas Stove, almost without noise, and the Paraffin Gas ignites itself. Pumping is therefore unnecessary till a convenient time after the Stove is alight. Pumping afterwards is only required once an hour for ordinary cooking. The flame is smokeless and powerful.

“Primus” Nos. 4 and 5 are without wick and burn petroleum or paraffin oil with a blue atmospheric flame and without smell. They consume only one-third pint of paraffin per hour and will boil half a gallon of cold water in four minutes.

“Primus” No. 5 is an improvement on No. 6, which therefore has been discontinued.

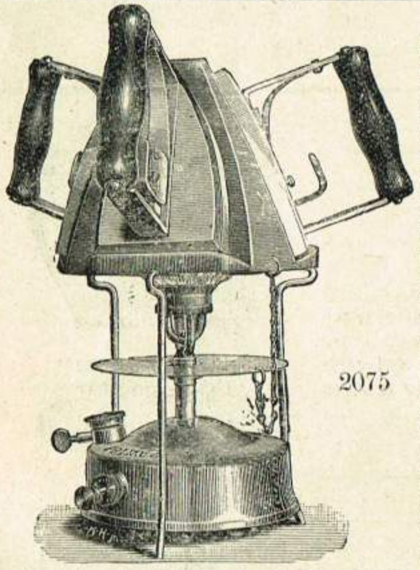


2074

“Primus”	No. 4	No. 5
Full Height	$7\frac{3}{4}$	$8\frac{1}{2}$in.
Capacity of Tank	$1\frac{5}{8}$	$2\frac{1}{4}$ pints.
Weight with Cast Iron Top Ring	$3\frac{1}{4}$	4lb.
Price with „	10/-	11/6 each.

Complete Burners, only 3/6 each.

The “Primus” Iron Heater.

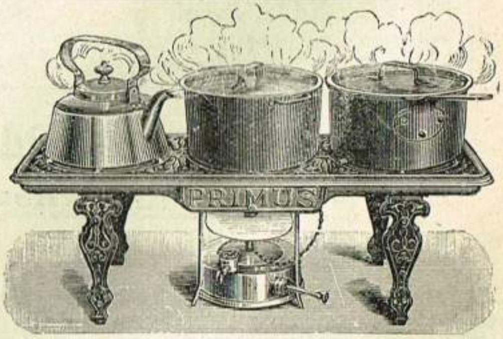


2075

“The Primus Iron Heater” will keep the Smoothing Irons constantly at a uniform heat for any kind of ironing. If four Irons are used, two Ironers will constantly have well-heated Irons at their service. The Iron Heater is made of cast iron, and is removable, so that the “Primus” Stove may be used for Cooking purposes. This invention does away with the heavy coal fires which previously had to be kept going when Ironing, and which, particularly on warm days, were very trying.

Price of the Iron Heater (without Irons) 2/6 each.
„ “Primus” Stove 11/6 „

The “Primus” Range, No. 100.



2076

Length 27in. Width $9\frac{1}{2}$in. Height 9in. Weight of Range 26lb.

The “Primus Range” will Fry, Cook or Boil three dishes more quickly than the best coal fire. Immediately the Stove is lighted the heat passes through the Flue to both ends of the Range. The Range is of cast iron and well finished. The centre place is the principal one for boiling, etc. The two end places are very convenient to keep a dish simmering, for stewing pans, etc.

Price of Range (without Utensils) ... 14/6 each.
„ “Primus” Stove, No. 5 ... 11/6 „

Special Cooking Utensils are not supplied, as any ordinary Pots or Pans, etc., are used with the Range.

Each Range Packed in a Case.

The "Forward" Petroleum Gas Lights for Contractors, etc.

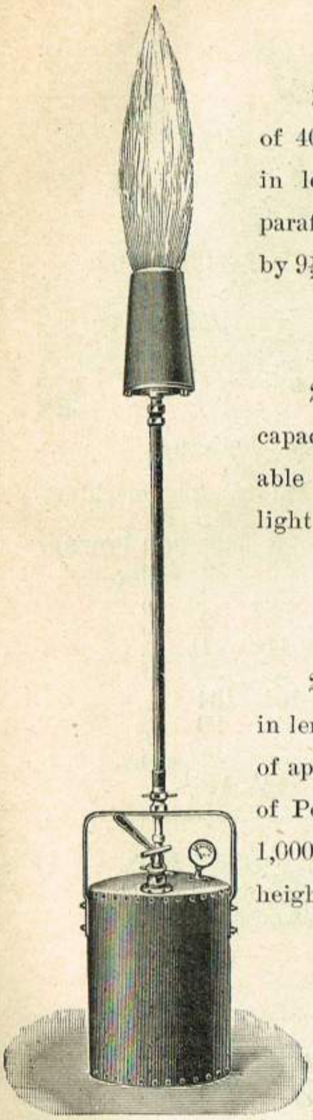
PRICES AND DETAILS.

2077 No. 1 Has a lighting capacity of 400 candle power, with a flame 16in. in length. It burns about 2½ pints of paraffin oil per hour. Size of Tank 16in. by 9½in. Total height 5ft. Price £5 5s.

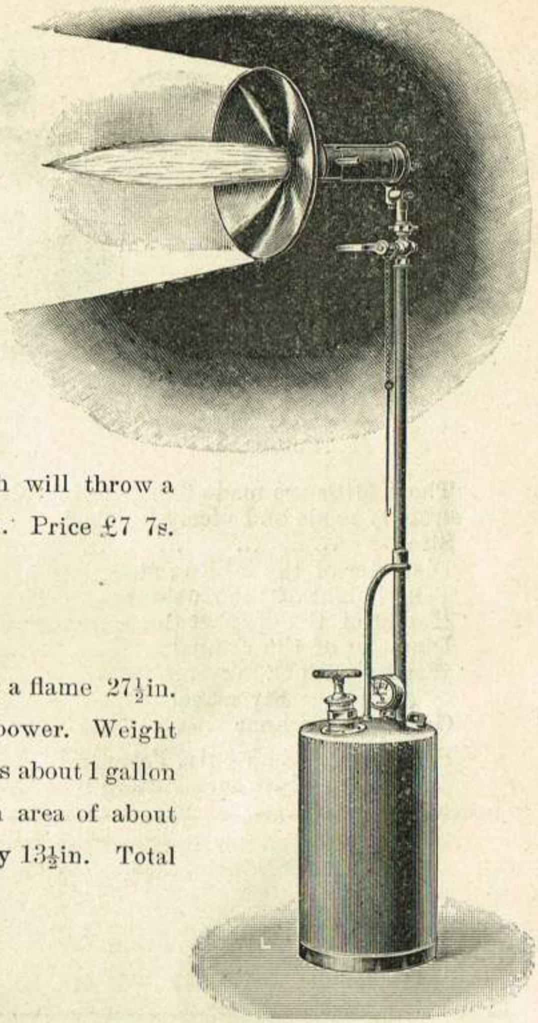
2078 No. 2 Similar in size and capacity to No. 1, but fitted with adjustable burner and powerful reflector which will throw a light of 800 candle power in any direction. Price £7 7s.

2079 No. 3 Large size light, giving a flame 27½in. in length, with from 2,000 to 2,500 candle power. Weight of apparatus, empty 60lb., full 144lb. Burns about 1 gallon of Petroleum per hour and will light an area of about 1,000 square yards. Size of Tank 20in. by 13½in. Total height 6ft. 7in. Price £12 12s.

2080 No. 4 Same size as No. 3, but with adjustable burner, £13 13s.



No. 3 Straight Flame.



No. 2 with Adjustable Flame and Reflector.

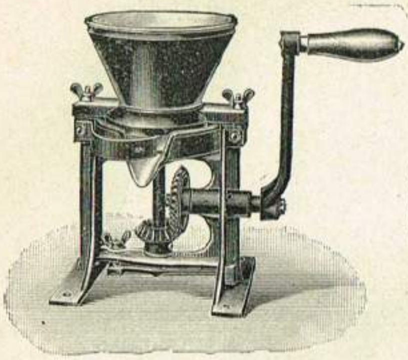
These Lamps are of very substantial construction, and the mechanism is so simple that any ordinary labourer can attend to same. They are very portable and can easily be removed from one position to another by one man. The lighting up of same only requires about five minutes, and they will burn well in either wet or windy weather. Under ordinary circumstances a pressure of one atmosphere is sufficient to produce a satisfactory working light, but in stormy weather this should be increased to 1½ or 2 atmospheres, which is easily done by a few extra strokes of the pump.

To Light the Apparatus. A pressure of one atmosphere should be first obtained by pumping, which will force the oil into the burner; the tap should then be opened long enough to allow oil to escape and fill container provided with asbestos wick; then turn off tap and light the asbestos which will heat the burner in a few minutes; when this is burnt out the burner will be heated sufficiently, and the tap should be turned on fully when the flame will almost at once attain its full working capacity.

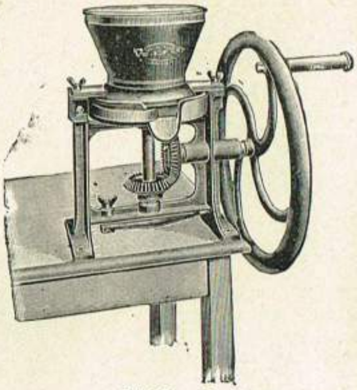
To Extinguish it is only needful to slightly open the supply valves.

Paint Mills,

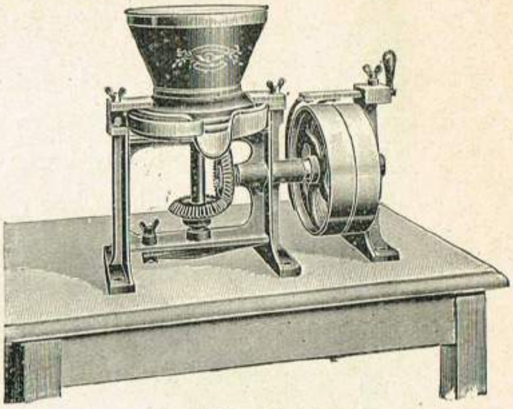
And Painters', Glaziers' and Paperhangers' Tools.



2081 Pattern A.



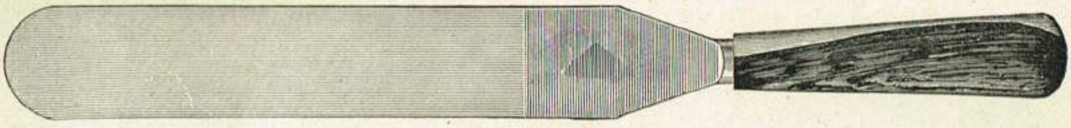
2082 Pattern B.



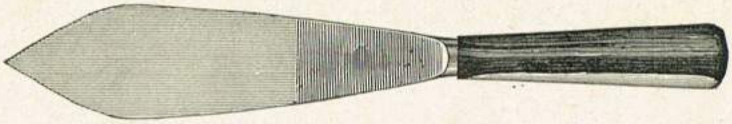
2083 Pattern C.

These Mills are made for grinding all descriptions of Oil or Water Colour Paints. The machines are strongly made and nicely finished.

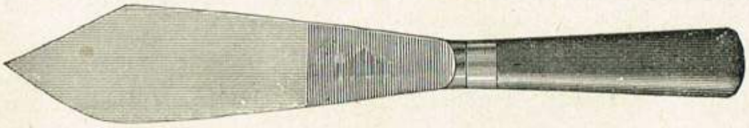
Size	1	2	3	4	5	5C FOR POWER.	
Diameter of the milling plate	4¾	5¾	6¾	7½	10	10	inch.
Total height of the machines	12½	15	17	19¼	23½	23½	,,
Height of the Funnel (measurements taken inside)	4¾	6	7	7½	9	9	,,
Diameter of the Funnel	6	7½	8¼	9	11½	11½	,,
Weight with Crank ... ... about	18	30	40	55	—	—	lb.
,, ,, Fly wheel ... ... ,,	—	53	60½	85	161	134	,,
Grinding per hour ... ... ,,	6¾	11¼	16¾	23½	45	90	,,
Price, with Crank only, Pattern A	22/-	31/-	40/-	52/-	—	—	each.
,, with Fly-wheel, Pattern B	—	42/-	52/-	65/-	142/-	146/-	,,



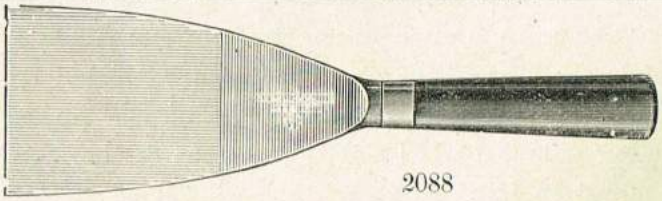
2084 Palette Knives 4in. 6d., 6in. 9d., 8in. 1/-, 10in. 1/9, 12in. 2/6.



2085 Putty or Stopping Knives, Ebony Handles, Stiff or Elastic Blades, 9d. each. Cheaper Quality, 6d. each.



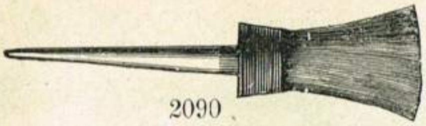
2086 Clipt Point Stopping Knives, Ebony Handles, 9d. each. Cheaper Quality, 6d. each.



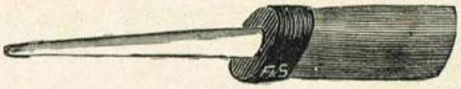
2088

2087 Chisel Knives, Ebony Handle, 9d. each. Cheap Quality, 6d. each.
2088 Best Wide French Chisel Knives, 3in. wide, 6d., 9d., 1/6 each.
2089 Glaziers' Hacking Knives, Small 6d.; Middle 8d.; Large 10d. each.

Painters', Plumbers', Glaziers' and Paperhangers' Tools.

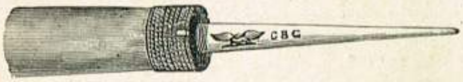


2090

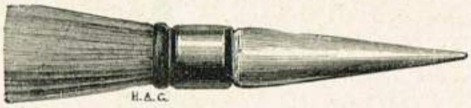


2091

2090	Painters' Dusters, Metal Wire Bound	8/0	6/0	4/0	3/0	2/0	0	1	2	3	4
	Best Quality	6/-	5/6	3/9	3/6	2/9	2/6	2/-	1/6	1/3	1/-
2091	Ground Brushes, Metal Wire Bound, Best Grey Middles, Oval										
		8/0	6/0	4/0	3/0	2/0	0	1	2	3	4
		5/6	4/6	4/3	3/9	3/-	2/9	2/-	1/9	1/6	1/3

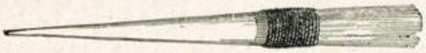


2092

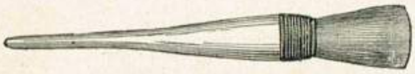


2093 & 2094

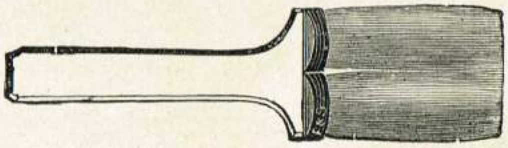
2092	Ground Brushes, Best Quality Grey Middles, Round										
		8/0	6/0	4/0	3/0	2/0	0	1	2	3	4
		5/-	4/3	4/-	3/9	2/9	2/6	2/-	1/9	1/5	1/-
2093	Best Quality Copper Bound Sash Tools, Nos.	4	5	6	7	8	9	10	12	14	16
	Best Lily Bristles	5d.	7d.	10d.	1/-	1/4	1/6	2/-	2/6	—	—
2094	Improved Metal Socket Sash Tools, White Bristles	2d.		3d.		4d.		5d.	7d.	9d.	1/-



2095



2096



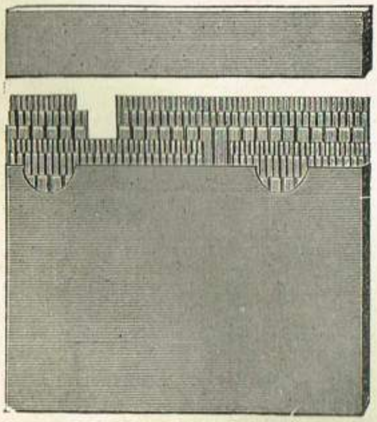
2097 to 2099

2095	Best Quality String Bound Sash Tools Nos.	1	2	3	4	5	6	7	8	9	10	12
		2½d.	3d.	4d.	6d.	8d.	10d.	1/-	1/4	1/8	2/-	2/6
2096	Medium Quality ditto, Red String Bound											
	Nos.	1	2	3	4	5	6	7	8	9	10	12	14
		1d.	1d.	1½d.	1½d.	2d.	2d.	3d.	4d.	4½d.	5d.	7d.	9d.

		7	8	9	10	11oz.
2097	Copper Bound Two Knot Distemper Brushes, White Fibre	7d.	8d.	9d.	10d.	
2098	Ditto Ditto, Mixed Hair Middles, Good Quality	3/-	3/3	3/6	3/9	4/-
2099	Best Quality ditto, Black Bristles		6/6	8/-	9/-	10/-

Any description of Brushes supplied to order. We shall be pleased to quote prices upon receipt of particulars of Brushes required.

Graining Combs.

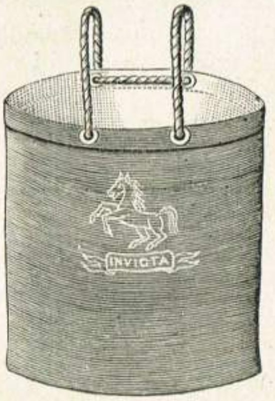


2100

Per Set of 12 in Tin Case, 3/- per Set.

Loose Combs, 1d. per inch.

Plumbers' Bags.

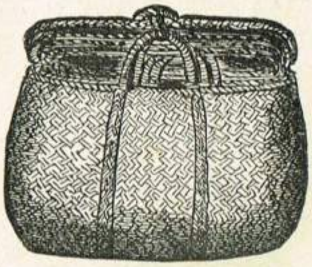


2101

Made of 2 thicknesses,
Stout Sailcloth.

No.	1	2	3
	1/6	1/9	2/- each.

Painters' Tool Baskets.

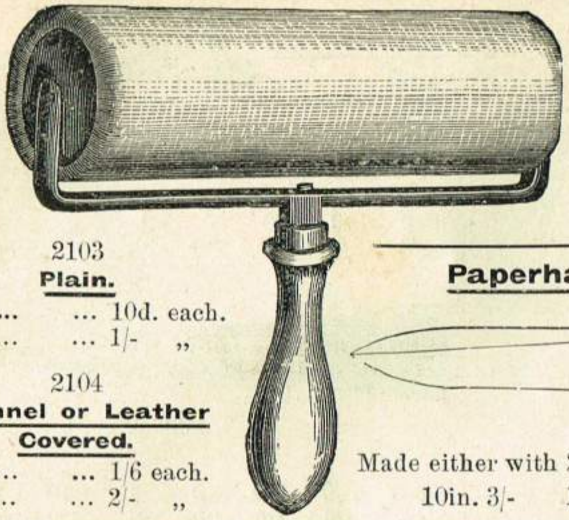


2102

Nos.	1	2	3
	1/-	1/3	1/6 each.

Painters', Glaziers', and Paperhangers' Tools—*continued.*

Paperhangers' Rollers.

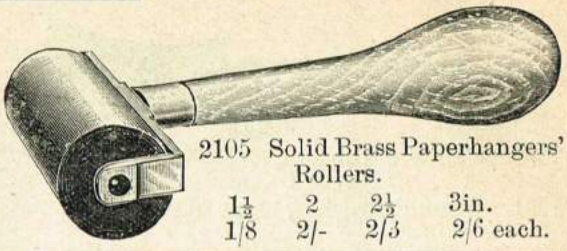


2103
Plain.

3½in. ...	... 10d. each.
7in. ...	... 1/- „

2104
Flannel or Leather Covered.

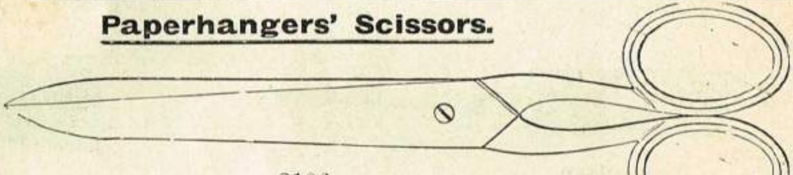
3½in. ...	... 1/6 each.
7in. ...	... 2/- „



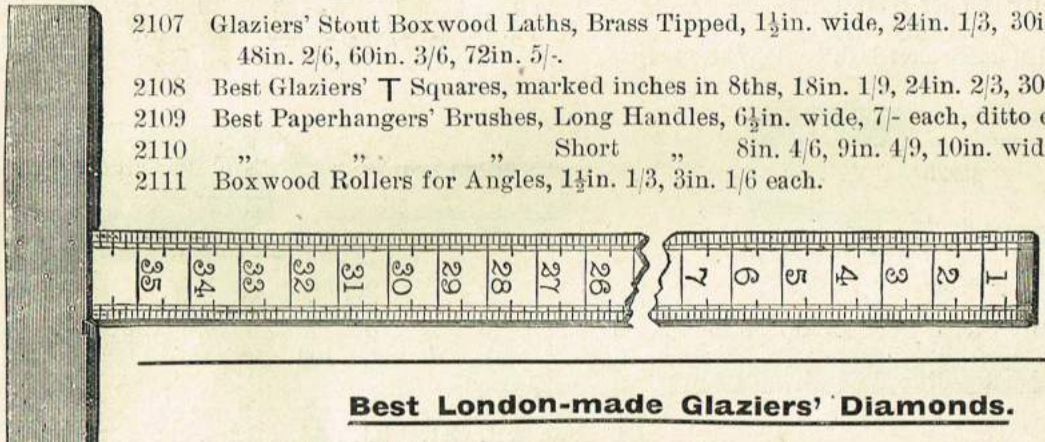
2105 Solid Brass Paperhangers' Rollers.

1½	2	2½	3in.
1/8	2/-	2/3	2/6 each.

Paperhangers' Scissors.



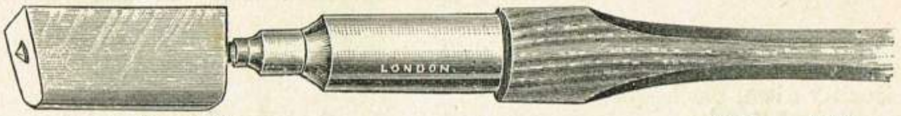
2106
Made either with 2 sharp points or 1 point square.
10in. 3/- 11in. 3/6 12in. 4/3 per pair.



2107 Glaziers' Stout Boxwood Laths, Brass Tipped, 1½in. wide, 24in. 1/3, 30in. 1/6, 36in. 1/9, 48in. 2/6, 60in. 3/6, 72in. 5/-.
2108 Best Glaziers' ⊤ Squares, marked inches in 8ths, 18in. 1/9, 24in. 2/3, 30in. 2/6, 36in. 3/-.
2109 Best Paperhangers' Brushes, Long Handles, 6½in. wide, 7/- each, ditto extra full, 8/6.
2110 „ „ „ Short „ 8in. 4/6, 9in. 4/9, 10in. wide 5/6 each.
2111 Boxwood Rollers for Angles, 1½in. 1/3, 3in. 1/6 each.

2108

Best London-made Glaziers' Diamonds.

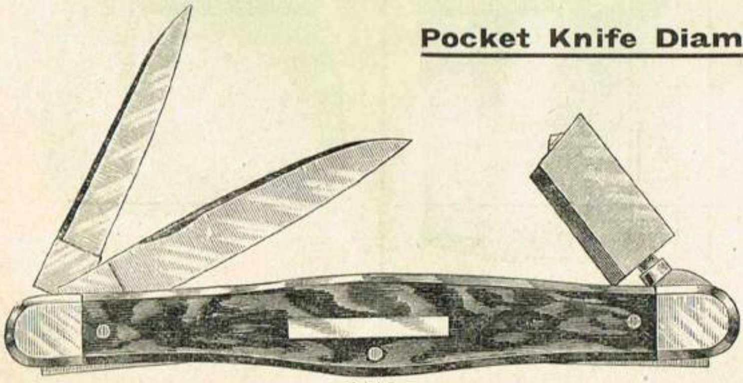


2112 to 2115

2112	Crown Diamonds for Sheet Glass...	10/6	13/6	16/6 each.
2113	Best Diamonds for Stout Sheet Glass	18/6	22/6	25/- „
2114	Best Plate Glass Diamonds	30/-	35/-	42/- „
2115	Best Ivory-handled Sheet Glass Diamond, with Silver Ferrule ...	—	—	20/- „
2116	Improved Leather Pocket Cases for above	—	—	1/- „

All the above Diamonds we guarantee to be of London manufacture. Every one is fully and carefully tested, and the cutting quality proved to be satisfactory. They are also all guaranteed to re-set. Price for re-setting, 3/6 each, post free.

Pocket Knife Diamonds.

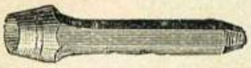


2119

2117	Knife Diamond, Ivory Handled, 1 Blade...	15/6 each.
2118	Knife Diamond, Ivory Handled, 2 Blades...	18/6 „
2119	Knife Diamond, Tortoiseshell Handle and 2 Blades ...	21/- „

Tinmen's Tools and Machines.

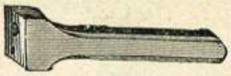
Tinmen's Punches, etc.



2120 Tinmen's Hollow Punches.

$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1¼	1½	1¾	2	2½in.
1/8	1/8	1/9	1/9	2/-	2/4	2/8	3/-	3/8	4/4	5/-	6/-	10/6 each.

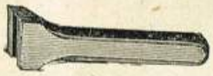
Or for set of 12, $\frac{3}{8}$ to 2in. 33/-.



2121 Rivet Sets (Best Solid Cast Steel) with Holes to clear Burrs to suit Rivets.

15	14	13	12	11		10		9	8	7	6	5	4		3 W.G.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16 size.

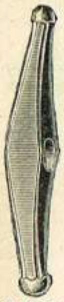
2/- each. | 2/4 each.



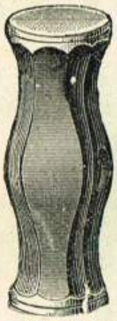
2122 Groove Punches ...

$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$in. grooves.
2/-	2/-	2/-	2/6	2/6	2/8	2/10	3/6	4/- each.

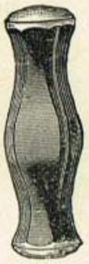
Tinmen's Hammers.



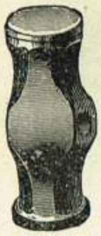
2123
Stud, 1/4 lb.; under 1lb., 1/3 each.



2124
Block 1/3 per lb.

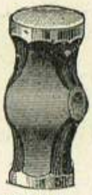


2125
Blocking or Hollowing, 1/3 per lb.

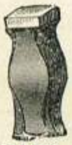


2126
Planishing 1/6 per lb.

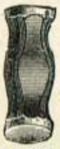
Convex Hammers, 2/6 per lb.; Concave, 3/6 per lb.



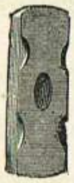
2127
Flat Face, 1/6 per lb.



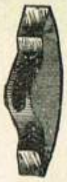
2128
Square and Round Face, 2/4 per lb.; under 1lb., 2/3 each.



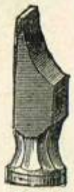
2129
Round Face 2/4 per lb.; under 1lb., 2/3 each.



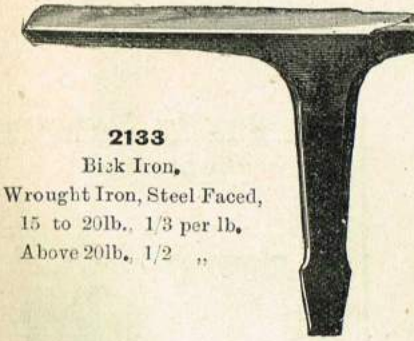
2130
Creasing, 1/9 each.



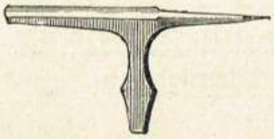
2131
Paning, 1/9 each.



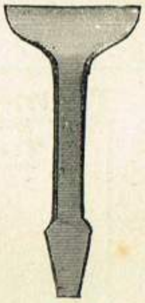
2132
Riveting 2/- each.



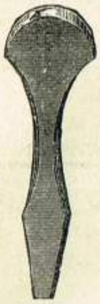
2133
Bick Iron.
Wrought Iron, Steel Faced,
15 to 20lb., 1/3 per lb.
Above 20lb., 1/2 ,,



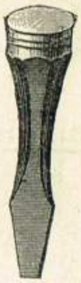
2134
Extinguisher Stake.
7lb., 1/4 per lb.



2135
Hatchet Stake.
10lb., 1/1 per lb.



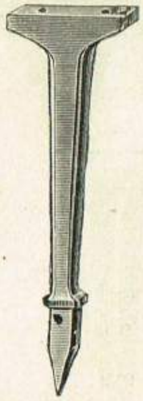
2136
Half-Moon Stake.
7lb., 1/1 per lb.



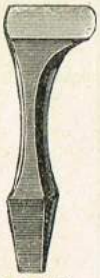
2137
Canister Stake.
15lb., 1/6 per lb.

2138
Tinmen's Anvils.
Average Weight, 45lb.,
1/6 per lb.

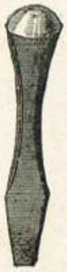
2140
Tinmen's Anvil Stakes.
Average Weight, 20lb.,
1/6 per lb.



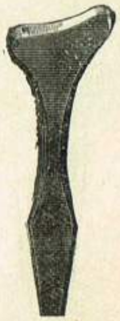
2142
Coopers' Beck Iron.
35lb., 11d. per lb.



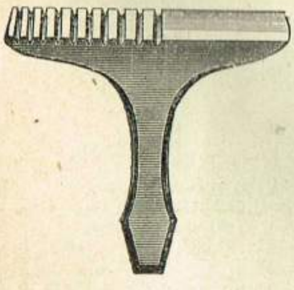
2143 Pepper Box Head.
1/6 per lb.



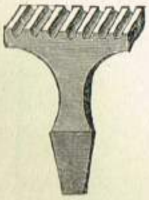
2144 Tea Kettle Bottom Stake.
14lb., 1/4 per lb.



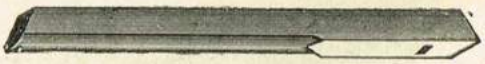
2145 Teapot Neck Tool.
5lb., 1/6 per lb.



2139
Creasing Iron.
14lb., 1/6 per lb.

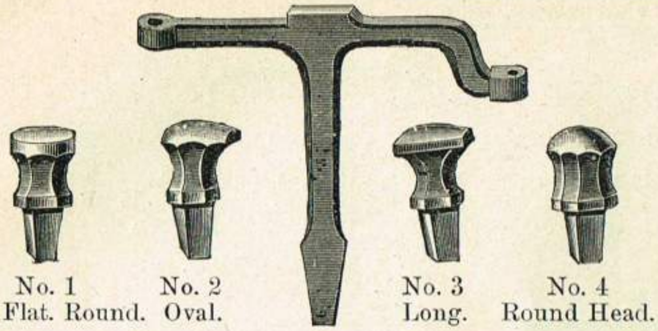


2141
Grooving Stake.
15lb., 1/9 per lb.

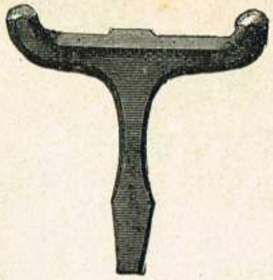


2146 Cast Mandril.
Usual length 4ft. Flat part 18 by 2¾ wide.
Half-round 30¼ by 2¾ wide.
Average Weight 75lb., 3½d. per lb.

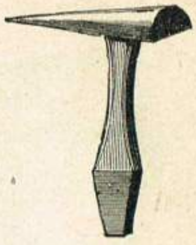
Tinmen's Tools—*continued.*


No. 1 Flat. Round.
No. 2 Oval.
No. 3 Long.
No. 4 Round Head.

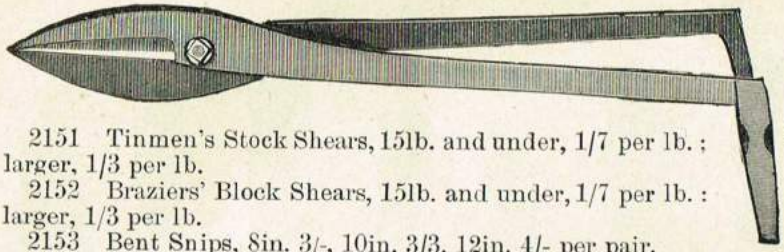
		per lb.
2147	Tinman's and Braziers' Horse, 28lb	... 11d.
2148	Heads for do., Nos. 1, 2, 3, 4, about 3lb. each	1/9


2149

Saucepan Belly Stake.
25lb , 1/6 per lb.


2150

Funnel Stake, 20lb.
Wrought Iron. Steel.
Faced, 1/2 per lb.
Cast Iron, 6d. per lb.


2151

2151 Tinmen's Stock Shears, 15lb. and under, 1/7 per lb. ; larger, 1/3 per lb.

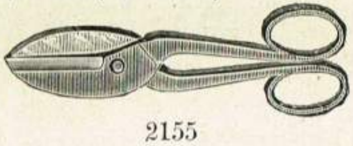
2152 Braziers' Block Shears, 15lb. and under, 1/7 per lb. : larger, 1/3 per lb.

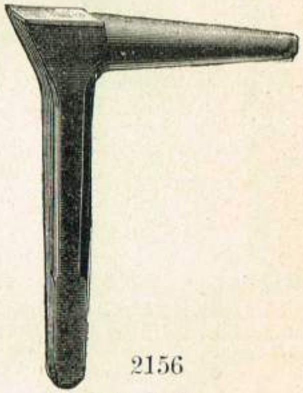
2153 Bent Snips, 8in. 3/-, 10in. 3/3, 12in. 4/- per pair.

2154 Straight Snips, 6in. 1/4, 8in. 1/9, 9in. 2/-, 10in. 2/3, 12in. 3/-, 14in. 4/- per pair.

2155 Scotch Shears, 8in. 3/-, 10in. 4/6, 12in. 5/6, 14in. 8/- per pair.

The weights given are about what we usually supply, unless otherwise ordered.

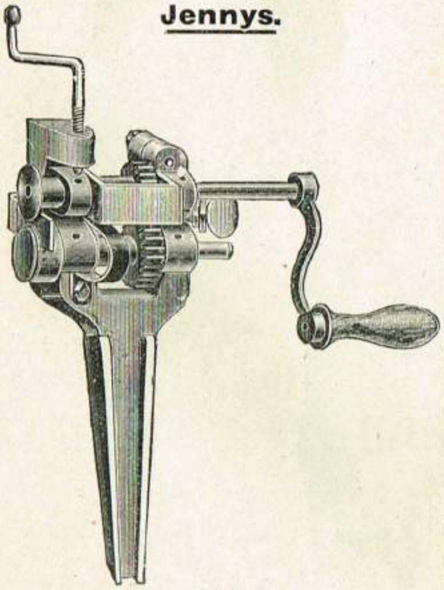

2155


2156

Side Stake,
30lb., 1/- per lb.

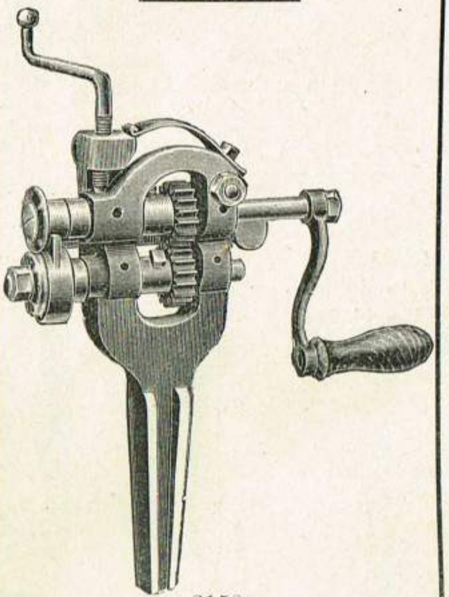
Tinmen's Machines.

Burring Machines or Jennys.


2157

No. 1 Small Size. Diameter of Top Roll 1½in. Price 32/6.
No. 2 Regular Size. Diameter of Top Roll 2in. Price 35/-.
No. 3 For Iron Work. Diameter of Top Roll 3½in. Price £5.

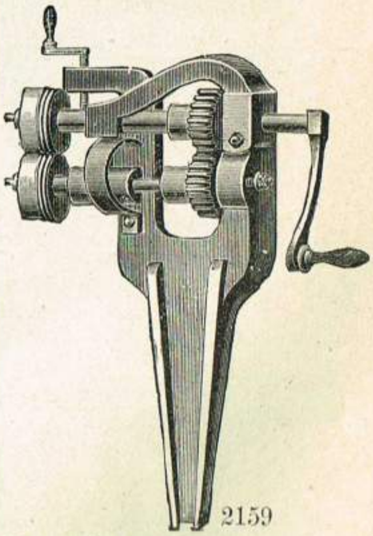
Turn-up or Wiring Machines.


2158

	No. 1	2 Strong	3 Strong,
Price	£4	£5	£8

Each machine complete, with 4 pairs of Wiring Wheels, 2 Tucking Wheels and Wrench.

Beading or Swaging Machines.

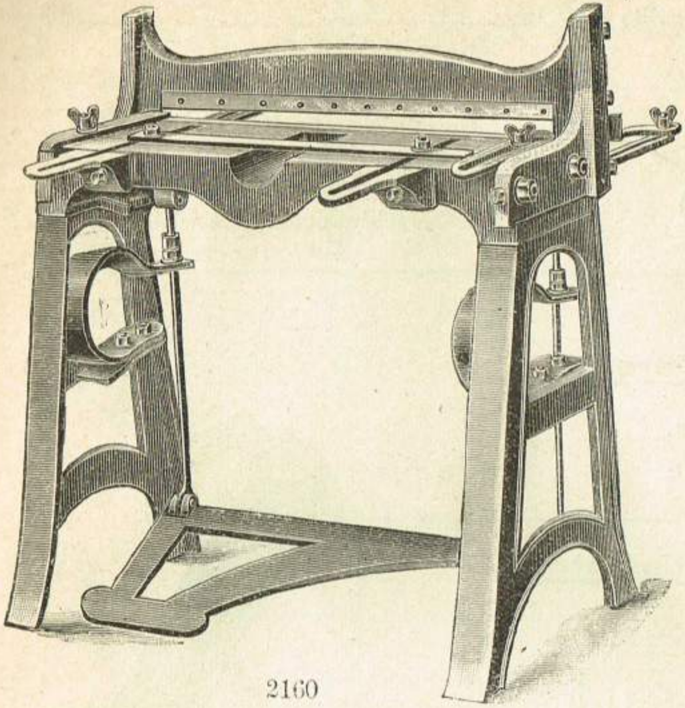

2159

No. 1 2½in. reach. Price £2.

Large Size Ditto, with Iron Base to fasten on Bench.

			£		
No. 2	4in. Reach	... ...	£3	5	0
No. 3	12in. ,,	... ...	4	12	6
No. 4	15in. ,,	... ...	7	0	0
No. 5	18in. ,,	... ...	9	5	0

Each Machine is complete, with 1 pair of Rolls. Extra Rolls, all Steel Ordinary Patterns, from 8/6 per pair'

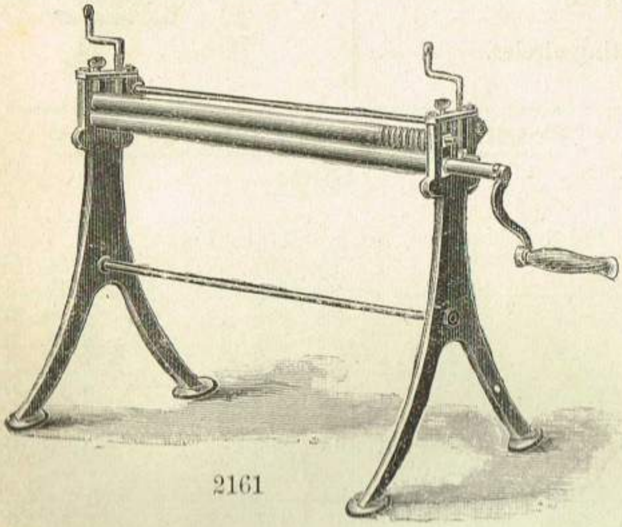


2160

Improved Guillotine Squaring Shears.

These Machines are constructed so as to be easily worked by foot power, leaving both the operator's hands at liberty. The knives are provided with adjusting screws. The table is provided with back and front gauges, which can be readily set for cutting any required angle.

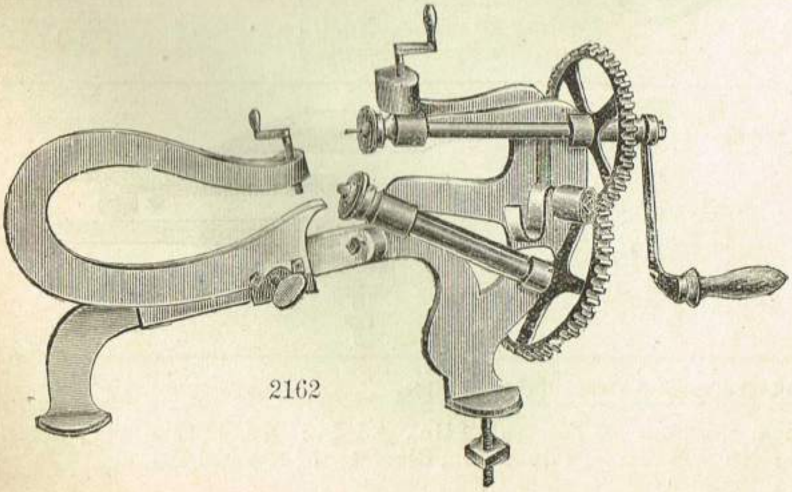
Length of Knives.	Will cut Sheets	Price. £	s.	d.
20⅜in.	- 20 B.W.G. -	8	10	0
24⅜in.	- 20 ,, -	9	7	6
30½in.	- 21 ,, -	11	10	0
36½in.	- 22 ,, -	13	10	0
40½in.	- 23 ,, -	16	10	0
42½in.	- 23 ,, -	20	0	0
48½in.	- 24 ,, -	27	10	0



2161

Bending Rollers.

No.	Length.	Diameter.	Fitted with Iron Rolls. £	s.	d.	Fitted with Steel Rolls. £	s.	d.
1	25in.	1⅜in.	3	10	0	3	15	0
2	31in.	1¾in.	4	15	0	5	5	0
3	37in.	2in.	6	10	0	7	0	0
4	37in.	2⅜in.	9	0	0	9	15	0
4A	42½in.	2½in.	10	10	0	11	10	0
4B	42½in.	2⅞in.	14	0	0	15	0	0
4C	49in.	3in.	16	16	0	18	0	0



2162

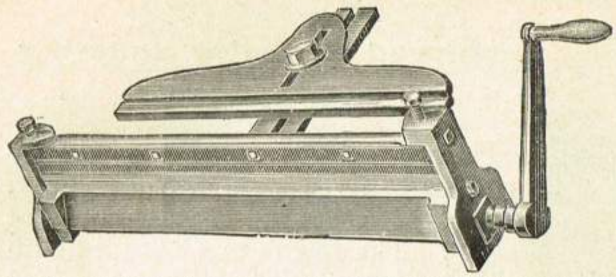
Circular Cutters.

	£	s.	d.
No. 1. From 2½ to 14in. diameter - -	3	0	0
No. 2. From 3 to 18in. diameter - -	5	0	0
No. 3. From 12 to 36in. diameter - -	10	0	0

Extra Cutters, per pair—No. 1, 4/- ; No. 2, 5/-.

Pallets or Clam Plates for above, 20/- extra.

Tinmen's Machines—*continued.*



Angle Bending Machines for Tin Plates.

2163 17in. long. Price £4.

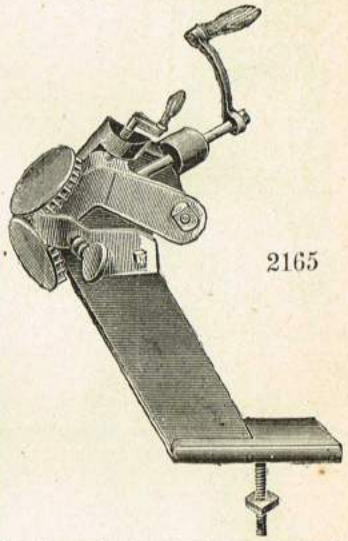
2164 Strong Ditto for Sheet Iron—

20in.	26in.	30in.	36in.	42in.
£7	£9 10s.	£10 10s.	£13	£15 10s.

Each of these Machines complete with one pair of dies.

Paning Down Machines.

No. 1. Price £2 15s.
No. 2. Price £3 10s.

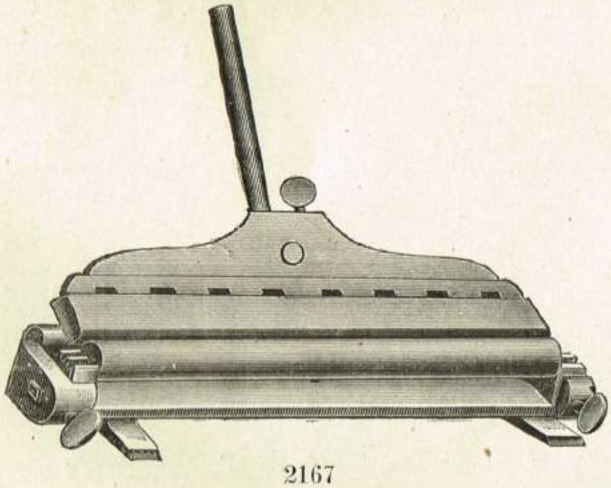


2165

Circular Shears for Cutting Strips.

		£	s.	d.
2166	No. 1	4	0	0
	„ 2	5	5	0
	„ 3	6	10	0
	„ 4	7	15	0

Can be fitted with Slide and Bow for cutting circles.



2167

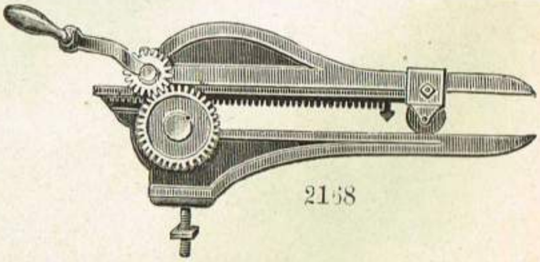
Folding Machines with Parallel Slide.

			£	s.	d.
Folding Machine, No. 1	17¾in. long	...	2	7	6
„ „ „ 1½	20¼ „	..	2	12	6
„ „ „ 2	26⅜ „	...	3	17	6
„ „ „ 2½	28⅜ „	...	4	10	0
„ „ „ 2¾	30⅜ „	...	5	0	0
„ „ „ 3	36⅜ „	...	7	0	0
„ „ „ 4	48⅜ „	...	9	10	0
„ „ „ 2A (With Slot for Trunk making.)	30⅜ „	...	5	0	0
Folding Machine, No. 3A (With Slot for Trunk making.)	36⅜ „	...	7	10	0
Folding Machine, No. 0 narrow edges.	12 „	...	2	15	0

Grooving Machines.

		£	s.	d.
No. 1, 18in. long	... ...	3	5	0
No. 2, 24in. „	... ...	4	7	6
No. 3, 30in. „	... ...	6	15	0

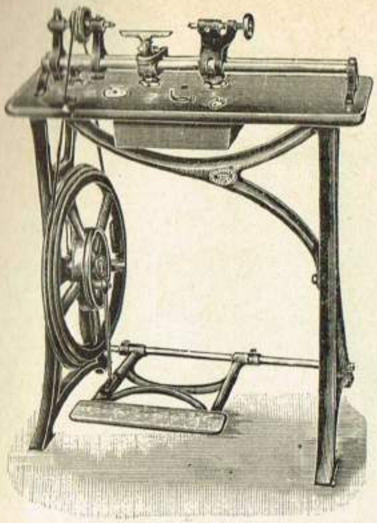
Each Machine complete with Four Grooving Rollers.



2168

Bottom Closing Machine.

2169 No. 1 Machine, 10in. reach, diameter of low roll 2¼in., £3 5s.; No. 1½ Machine, 12½in. reach, diameter of low roll 2¼in., £4; No. 2 Machine, 15in. reach, diameter of low roll 3in., £5.



2170

Twentieth Century Lathe.

For Amateurs, Jewellers, Pattern-Makers, Dentists, etc.

30in. bed. 3in. centres.

First-class tool, with Patent Bed, composed of two Round Steel Shafts, which facilitate the movement of Rest and Tail Stock, and admit of being turned round when worn. Steel Mandril to Head Stock, with conical neck, adjusting screw, and lock-nut. Three-speed Turned Cone Pulley. Hardened Morse Taper Centres. Driver-plate and Dog for metal and wood. Two ┬ Rests for metal and wood.

All as shown on illustration, without Stand ...	£2 2 0
With Stand, Treadle, and Fly-wheel, complete	4 10 0

Plain Foot Lathe.

This Lathe is designed to meet the requirements of any light business, for turning and drilling, where a heavier and more expensive tool is not needed.

The Bed is iron, girder-ribbed, truly planed and mounted on strong iron standards.

Front Neck Conical, centre tail thrust.

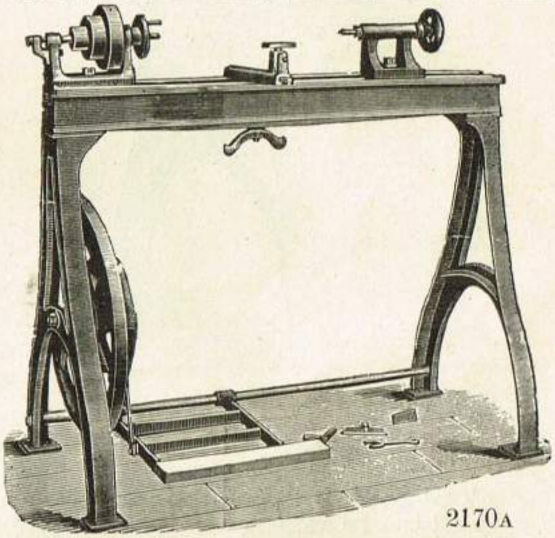
Cone, three speeds: 5½in., 3¾in., 2in., for 1⅛in. belting.

Driving Wheel, diameter 19⅛in., 20⅛in., 21⅛in.

Loose Head, fitted with steel spindle.

Hand Rest Socket, with rests for wood and iron.

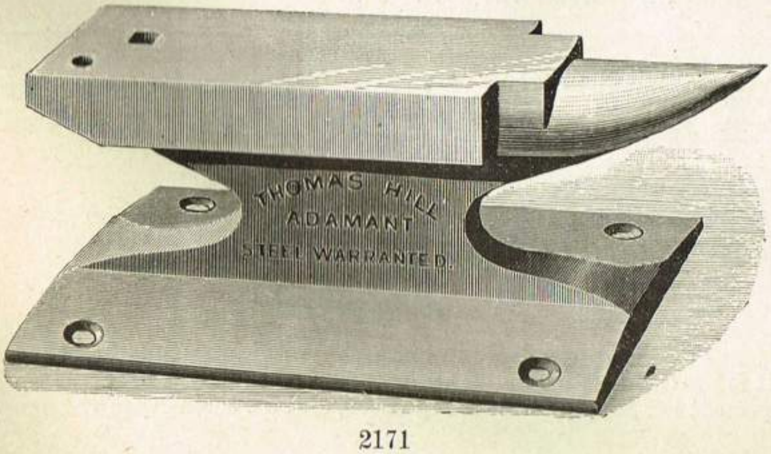
Carrying Plate; Centres for Wood and Metal; and all necessary wrenches.



2170A

Centres.	Length of Bed.	PRICES.		Compound Rest.	Extra Length of Bed per foot.	Approximate Weight.
		Foot Power.	Steam Power including Countershaft.			cwt. qr. lb.
4in.	3ft. 6in.	£8 8 0	£8 8 0	£3 15 0	15/-	2 2 0

Solid Steel Anvils.



2171

No. 1. 5in. long, 1½in. wide, weight 5lb. Price 6/6 each.

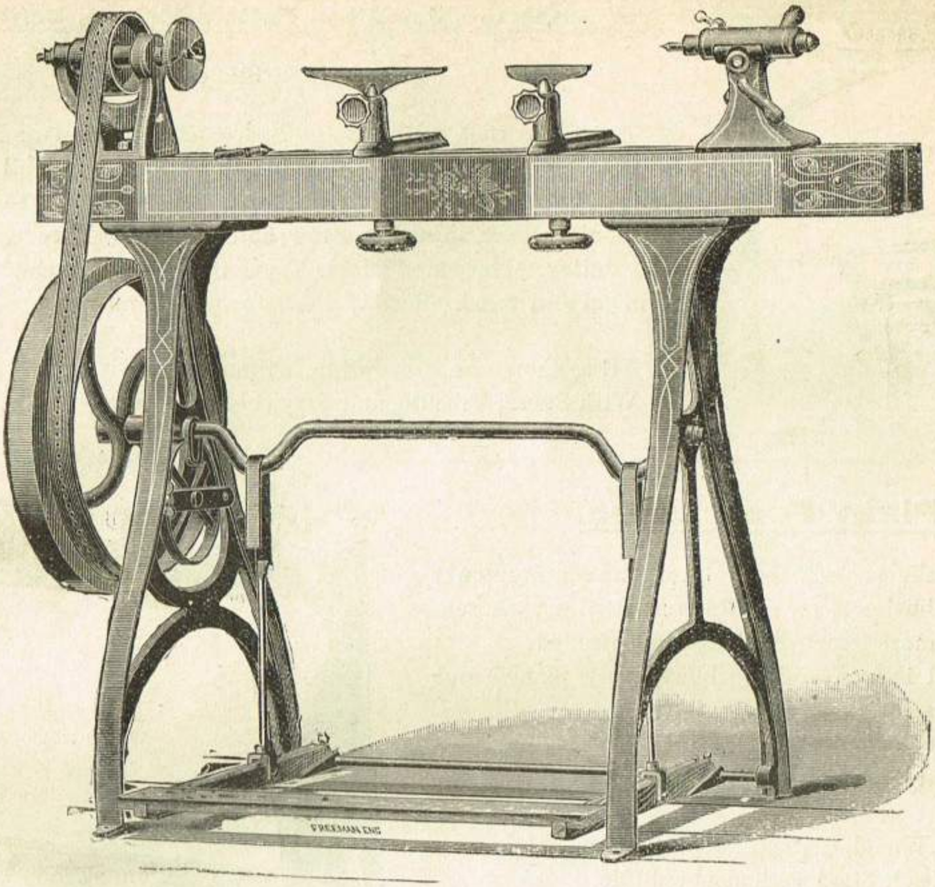
No. 2. 6in. long, 2in. wide, weight 7lb. Price 8/6 each.

No. 3. 7in. long, 2in. wide, weight 9lb. Price 10/6 each.

These Anvils are not cast into this shape, but are forged from solid steel, and have a suitable Anvil temper throughout.

The Horn is 2in long, in addition to the length of face given above. The face, sides, and horn are ground true and nicely polished.

Barnes' Wood-Turning Lathe, No. 3 (Improved).



2170B

This Lathe is designed for wood-turning. It will take in stock 12in. in diameter and 3ft. long. The speed can be varied from 1,000 to 2,000 revolutions per minute. It is made entirely of iron and steel, except the bed, which is of wood. The spindle is of steel, fitted up in the best manner. All the bearings are of steel, making them strong, durable, and light-running. The centres are accurately fitted to taper holes. No wrench is required to adjust the tail-stock or tool-rests and sockets, handwheels being used instead.

Face-plate, centres, two tool-rests, and holders are included in the price.

Weight, 230lb.

PRICES.

Complete, as shown	£8 0 0
Screw Chuck, for wood-turning	0 7 6

Improved Gas Heater,

For Tempering Drills, Punches, Chisels, Small Tools, etc.

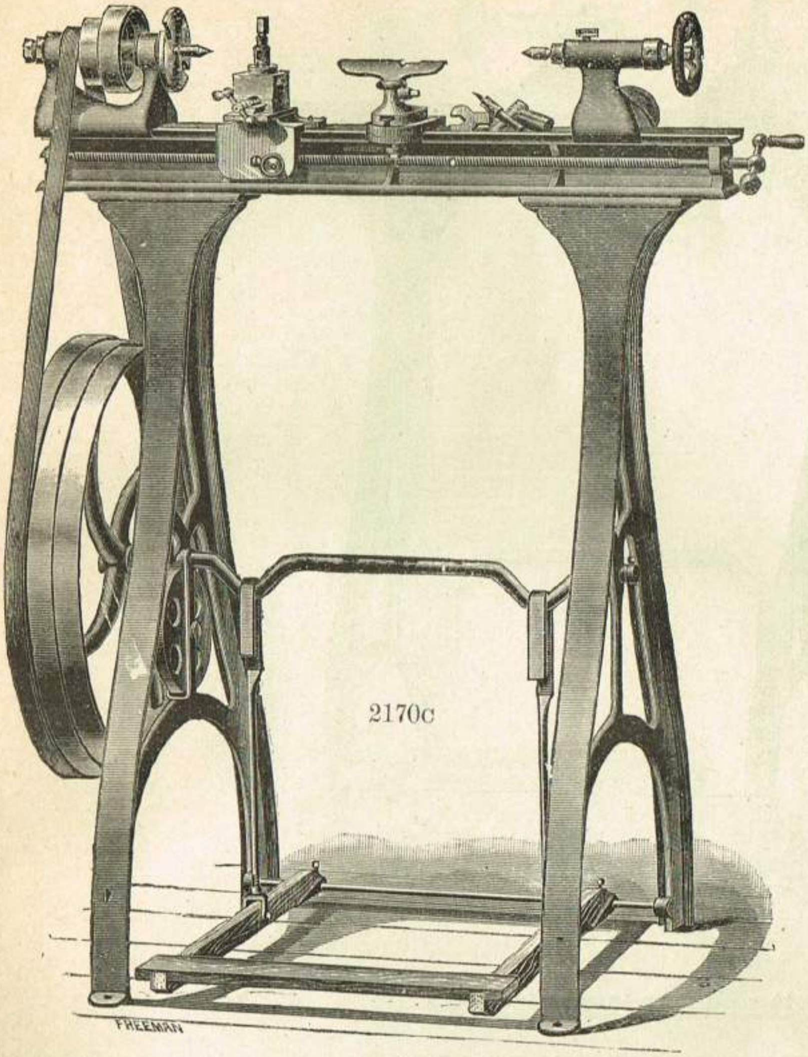
2172

This Heater, in many instances, takes the place of a forge in tempering machinists' small tools, and is more convenient and economical. It is provided with a collar with holes corresponding to those in the lower part of the tube. By this arrangement the supply of air is regulated, and the intensity of the flame controlled.

Price 3/6 each.

Barnes' Foot-Power Lathe, No. 4.

(Nett and Carriage Forward.)



This Lathe is designed for turning both wood and iron, and for boring, drilling, polishing, &c. It is a desirable size for small work, and has many important advantages in the construction and arrangement of its parts. Centres take 7in. diameter and 20in. in length. The speed can be varied from 1,000 to 2,000 revolutions per minute, and the motion can be started, stopped, or reversed instantly, at the will of the operator. The Lathe is entirely made of iron and steel. The bed is solid, and has V-shaped projections, over which the head and tail stocks and hand and slide rests are fitted. The lead screw for the carriage is operated by hand; by it the carriage can be travelled 20in.—the entire distance between the centres. The carriage can be engaged or disengaged instantly from the lead screw. The cross feed way on which the tool post moves can be set at any desired angle for taper turning and boring. The tail-stock can be moved and set at any point desired by the simple turning of the hand-wheel; or it can be taken off entirely, thus leaving the bed free for face-plate or chuck work. The headstock spindle is hollow, size of hole $\frac{9}{32}$in. The headstock spindle has taper bearings, and is capable of very nice adjustment. The tailstock centre is self-discharging. One turned face-plate, two pointed and one spur centres, wrench and necessary belting are sent with the Lathe.

Weight 210lb.

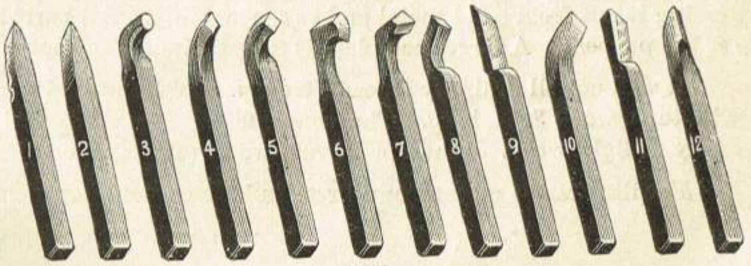
Price	£9 0 0
Set of Six Metal Tools	0 6 0

Best Cast Steel Lathe Tools.

The accompanying cuts illustrate the style of Metal-turning Tools supplied for Barnes' Lathes, Nos. 4, 4½, 5, 5½, and 6.

PRICES.

Set of Six, for No.	4	6/-
" Eight "	4½	10/-
" " "	5	12/-
" " "	5½ and 6 ...	15/-



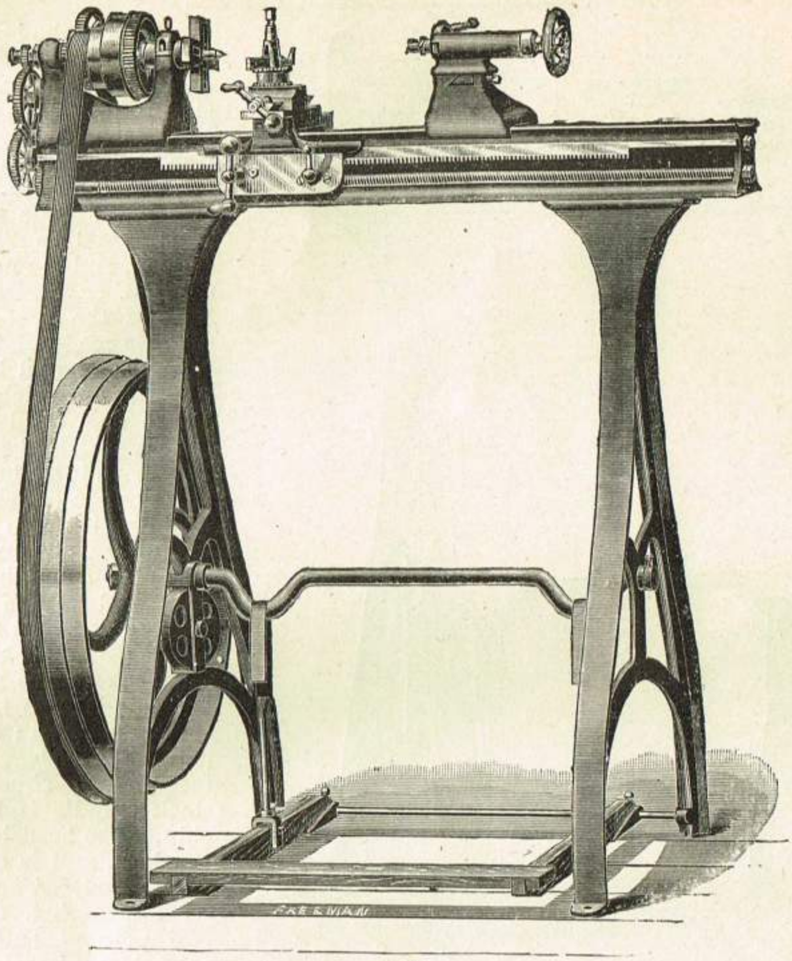
2173

2174 Best London-made Ditto, with Square Shanks.

¼	⅜	½	⅝	¾in square.
11/6	12/6	15/6	20/-	26/- per Set of 12.
1/-	1/1	1/4	1/9	2/3 each.

Barnes' Screw-cutting Foot Lathe, No. 4½.

With English Treadle.



2175

(Nett and Carriage Forward.)

This Lathe is a size brought out to meet the demand for a small Screw-cutting Lathe. It is nearly equal in capacity to the old No. 5. It is back-geared, feeds either to the right or left, and cuts screws right or left without change of gearing.

The carriage is adjustable for taper boring or ball turning. It is thoroughly gibbed for taking up all wear. The tailstock has side movement to adjust centres for turning tapers. The headstock has a hollow spindle, allowing rods up to ⅜in. to pass through the head and be held in a chuck. All the gearing is cut from solid metal and runs smoothly. All parts are made of steel where it is most suitable for the purpose. A large face-plate is now included, as shown on No. 5 Lathe, and also a centre rest.

It will cut all ordinary threads from 5 to 40 and odd threads up to 154. It has 4½in. centres, and will turn work 25in. long. The cone pulleys are 2½, 3½ and 4½in., giving a good variety of speed for heavy or light work. When preferred, we can supply a countershaft in place of the foot power.

For illustration of compound rest and attachment, see page 268.

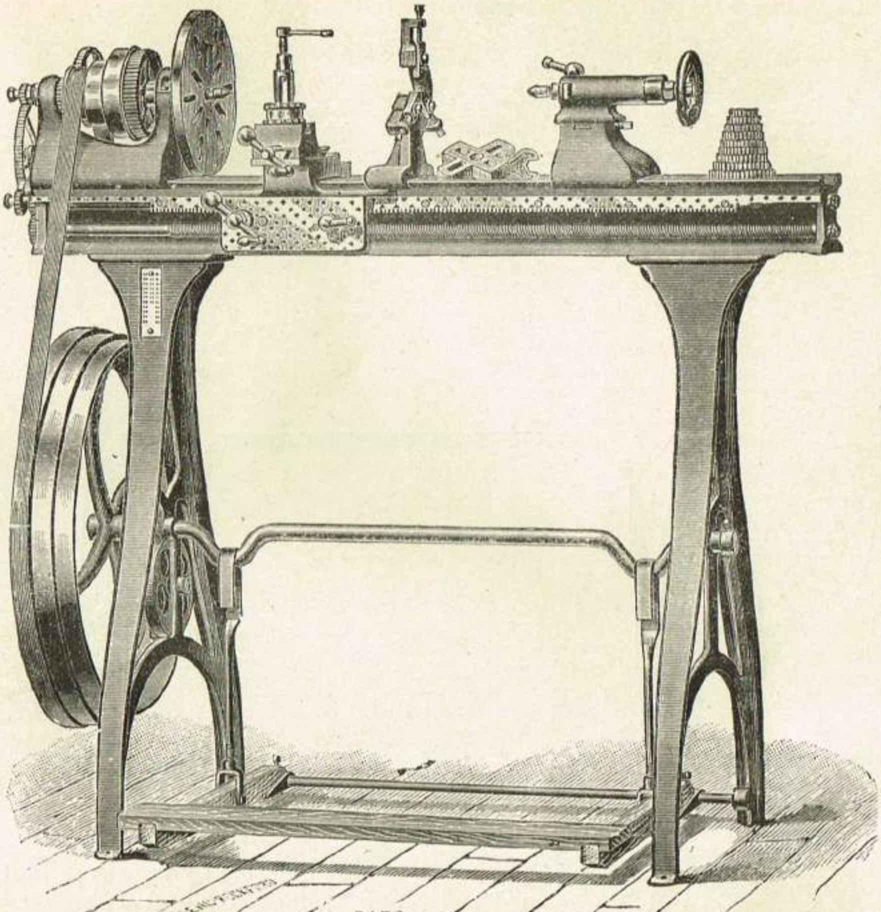
Weight of Lathe 270lb.

PRICES.	With Plain Rest.		With Compound Rest.
Lathe	£14 12 6		£16 10 0
Countershaft, extra (Pulleys 7in. by 1½in., speed 250 rev.) ...		£3 7 6	
Centre Rest		£0 12 6	
Set of 8 Tools to suit Tool Post		£0 10 0	
Hand Rest for Wood Turning		£0 11 6	

Barnes' Screw-cutting Foot Lathe, No. 5.

With Ordinary Foot Treadle.

(Nett and Carriage Forward.)

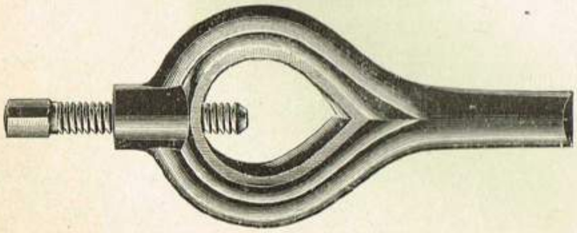


2176

No. 5 Lathe is 5½in. centres and 3¼in. over the tool carriage, and is 34in. between centres. It is thoroughly and substantially built. The headstock has a hollow steel spindle, with a $\frac{15}{32}$in. hole through its entire length. The boxes are accurately fitted to the spindle, with provision to keep them true and take up wear. The tailstock can be readily set at any desired point, or taken altogether from the Lathe bed, thus leaving it free for face-plate or chuck work. It can also be set over for turning tapers. The spindles of both head and tail stocks are of steel, with positively true taper holes for the reception of the centres, and the tailstock centre is self-discharging. The tool carriage on the Lathe swivels so that the tool can be set to the work at any desired angle, and it also adapts the Lathe for taper boring. All the works are securely protected from chips and dirt, thus ensuring long wear and durability to the most costly and vital parts of the Lathe. It is indexed for threads 4 to 40, and the change gears furnished can be combined for many other threads. As a right or left Screw-cutting Lathe it is complete. All the gearing is cut from solid metal in the best machinery known for gear-cutting, and is as true and noiseless as possible. We can supply with countershaft instead of foot power at the same price.

Weight of Lathe, 385lb.	With Plain Rest.	With Compound Rest.
Price of Lathe	£20 5 0	£22 10 0
Set of Eight Tools for Metal	12/- extra.	

Drop Forged Lathe Carriers with Steel Set Pins.

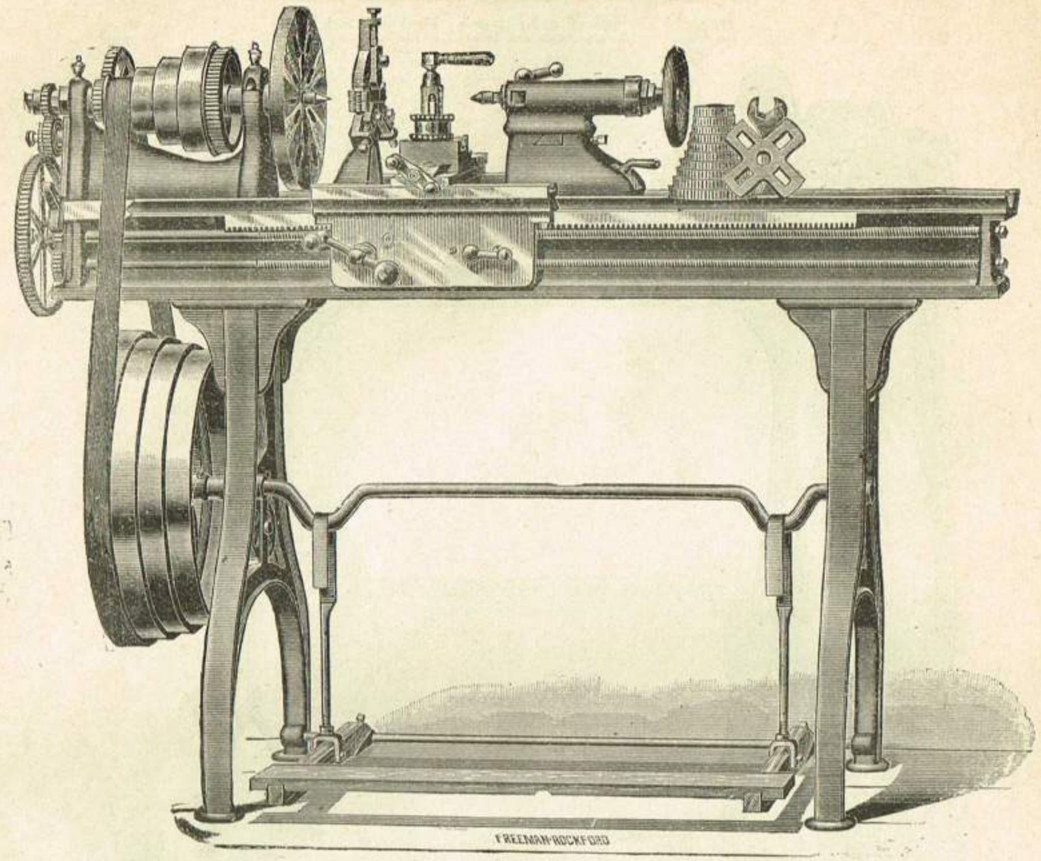


2177

⅜	½	¾	1	1¼in.
6d.	8d.	10d.	1/-	1/6 each.
1½	1¾	2	2½in.	
2/-	2/3	3/-	4/- each.	

Barnes' Screw-cutting Foot-lathe, No. 5½.

(Nett and Carriage Forward.)



2178

The No. 5½ Lathe is designed to do as heavy work as is practicable by the use of foot power. It is a strong thoroughly well-made tool in every particular, and is one of the best Lathes for its size for a job or manufacturing shop. The centres are 6½in.

It is low in price, because it has our Patent Twin-screw Feed and Screw-cutting Combination, which makes change of feed in the tool carriage instead of in the headstock. This greatly simplifies and reduces the number of parts commonly used for these purposes.

The tailstock has side movement to adjust centres for turning tapers. The headstock has hollow spindle for rods up to ½in. All the gearing is cut from solid metal. All parts are made of steel, where this would best serve the purpose. It is indexed for threads 4 to 36, and the change gears furnished can be combined for many other threads. We supply with plain rest, as shown, or compound rest.

We furnish our Lathes with countershaft for power, if preferred. When supplied with countershaft, the legs are fitted at the end of the bed.

Length of Bed.	Distance Between Centres.	Swing on Face-plate.	Swing over Tool Carriage.	Hole through Spindle.	Net Weight.	Gross Weight.	Prices.	
							With Compound Rest.	With Compound Rest and Countershaft.
5ft.	2ft. 9in.	13in.	8in.	$\frac{17}{32}$in.	640lb.	775lb.	£32 10 0	£33 14 0
6 ,,	3 ,, 9 ,,	13 ,,	8 ,,	$\frac{17}{32}$,,	690 ,,	850 ,,	34 17 6	36 1 6
7 ,,	4 ,, 9 ,,	13 ,,	8 ,,	$\frac{17}{32}$,,	740 ,,	890 ,,	37 5 0	38 9 0
8 ,,	5 ,, 9 ,,	13 ,,	8 ,,	$\frac{17}{32}$,,	790 ,,	950 ,,	39 12 6	40 16 6

For Price of Plain Rest Lathes, deduct £2 17s. 6d.

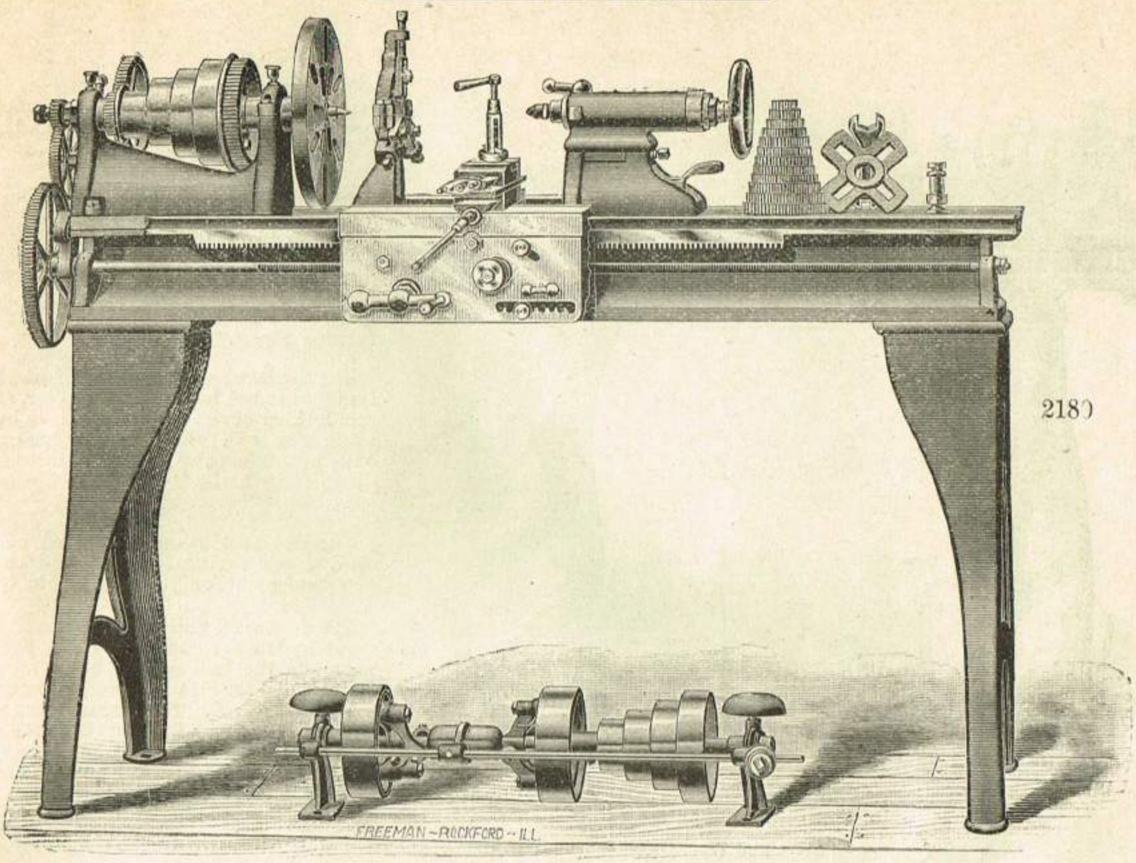
Taps suitable for Barnes' Lathe Mandrels.

2179

	Nos. 4	4½	5	5½
Prices, either Taper, Plug, or Bottoming	4/-	6/6	8/6	10/6 each.

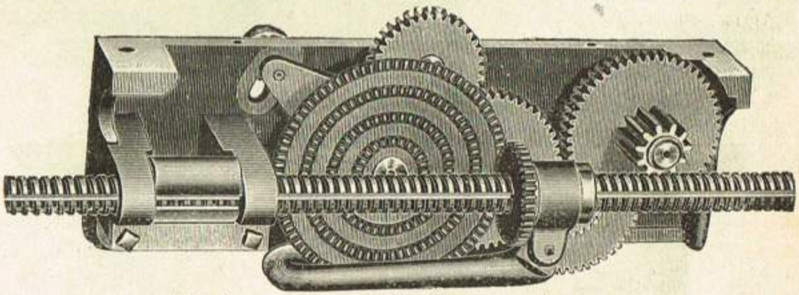
Barnes' Screw-cutting Lathe, No. 13.

With Power Cross Feed.


FREEMAN-ROCKFORD-ILL.

2180

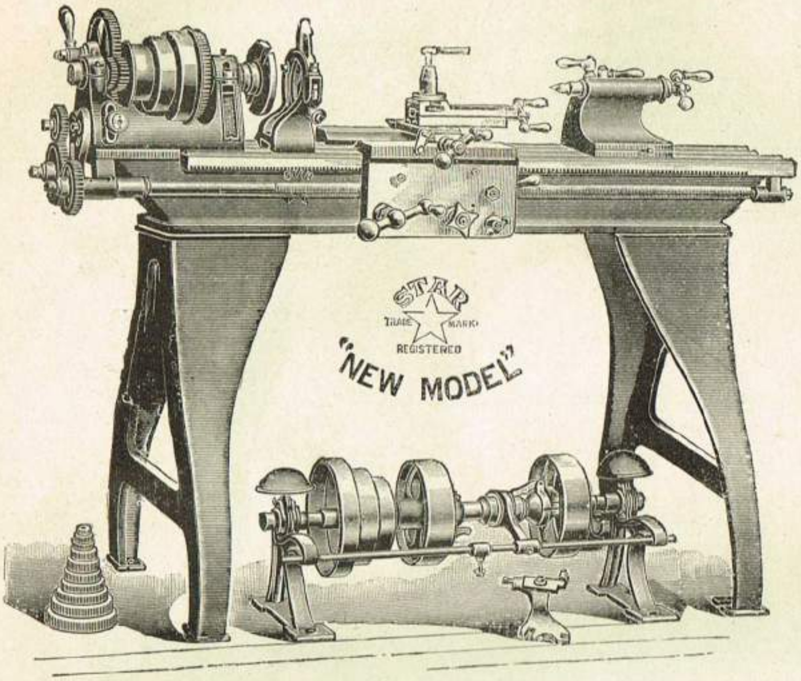
This is a new design of Lathe of similar capacity to the No. 5½, but being differently arranged as regards the feeding and screw-cutting mechanism, a single splined lead screw is provided which acts as a feed rod by means of a sliding gear which travels upon it. On the lower right-hand side of the carriage apron will be noticed a handle working in a notched slot: this handle controls the position of the sliding gear on the screw, and by it the feed can be regulated and reversed. The large knob in front of the apron engages and disengages the friction clutch, which stops or starts the feed motion and the smaller knob working in a diagonal slot near the top of the apron couples up the driving gear to either longitudinal or cross feed as may be required. The Tailstock has set-over arrangement and receptacle for oil; the centre is self-discharging. The index gives combinations for threads, from 4 to 32 per inch, and the necessary change wheels are provided. All gears are cut, and precautions are taken to ensure accuracy and good work. The chief moving parts are so placed and covered as to be protected from injury. Large and small face plates, centre rests, change wheels, and spanners accompany each lathe. Follow and hand rests are extra, the prices being 18/- and 16/- respectively.



Feed arrangement in Carriage Apron.

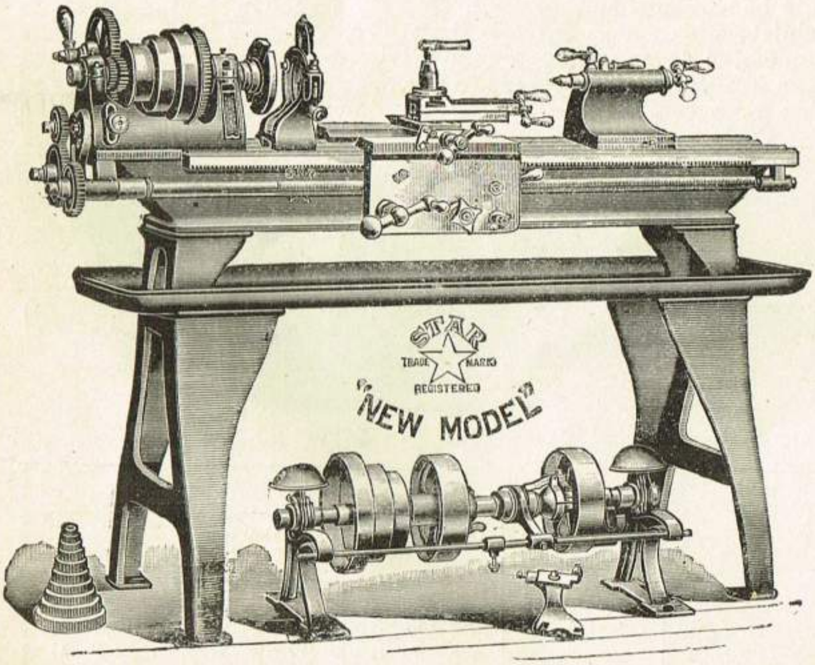
DIMENSIONS. Made with 5, 6, 7, 8, or 10ft. bed. Countershaft same as No. 5½.		PRICES.			
		Length of Bed.	With Treadle.	With Counter-shaft only.	Treadle and Countershaft.
			£ s. d.	£ s. d.	£ s. d.
Height of Centres	6½in.	5ft.	36 2 0	37 4 6	40 17 0
Swing over Carriage	8 „	6ft.	38 7 0	39 9 6	43 2 0
Turns in Length, with 5ft. Bed ...	33 „	7ft	40 12 0	41 14 6	45 7 0
Size of Hole in Spindle	17/32 „	8ft.	42 17 0	43 19 6	47 12 0
Weight, with 5ft. Bed	640lb.	10ft.	47 7 0	48 9 6	52 2 0

The "Star" Screw-cutting Engine Lathes.



2181

With Compound Rest and Countershaft.



2182

With Compound Rest, Oil Pan, and Countershaft.

DESCRIPTION.

The headstock has hollow spindle made from a crucible-steel forging; phosphor-bronze bearings, and improved end-thrust ball bearings. The centres are standard taper ½in. to the foot.

The tailstock will allow compound rest to swing around parallel with the ways and over the base, to operate feed-screw handle. The spindle is of steel, and the centre is self-discharging; the spindle locking device ensures perfect alignment. The tailstock is also provided with an adjustable side movement for turning tapers.

The carriage has a long bearing on the ways, is gibbed to bed both front and rear, and has a cam locking device for locking it to bed when using cross feed. Compound rest has graduated base, and is capable of fine adjustment, very desirable for boring and turning tapers, bevels, etc.

The tool post has an improved collar and shoe, which exclude all dirt and chips, and admits of a quick adjustment of the tool.

The improved automatic cross and longitudinal feeds are actuated by a phosphor-bronze worm on the lead screw. The lead screw is splined, and for all work except screw cutting acts as a feed rod. The feed may be thrown in or out by turning a knob in the apron, and will feed in or out, right or left, cut screws right or left, or may be thrown out of gear entirely by moving a lever in the headstock, without changing tbe motion of the foot or driving power.

The automatic cross feed is almost indispensable in a large variety of work, as it secures perfect accuracy in "turning," "facing-up," and other similar work.

The lead screw is steel, and provided with an open-and-shut nut, which is thrown in or out of contact by means of a cam lever in the apron.

These Lathes cut all standard threads from 3 to 64 inclusive, without compounding, and nearly all threads by compounding.

The patent foot power (see next page) consists of double treadles with a walking motion; the treadles are movable and work independently of each other, each being connected at opposite ends of the driving-wheel shaft.

The counter-shaft has an improved friction device, easy to operate, strong and durable; it also has improved adjustable and self-oiling shaft bearings; the pulleys and friction bands are provided with self-closing oil cups.

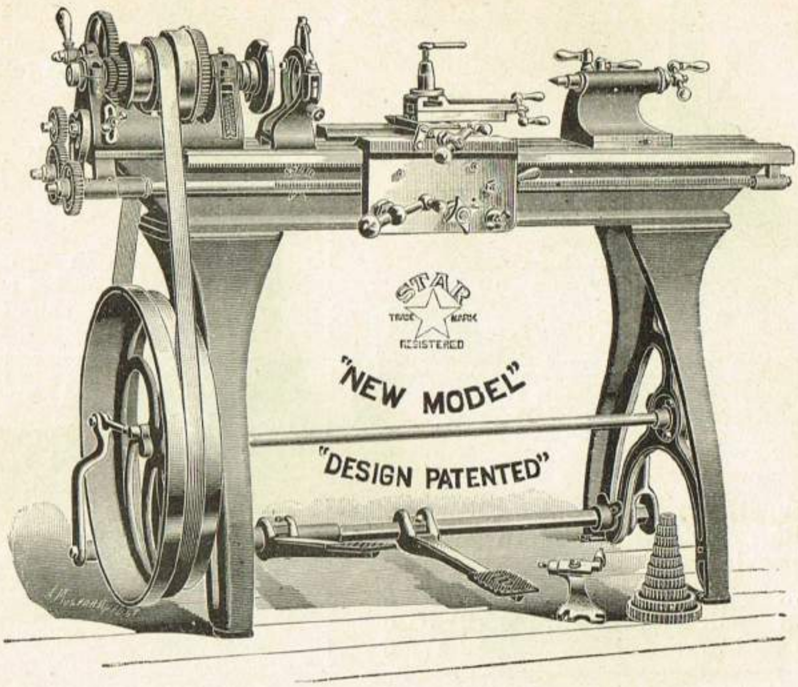
Each Lathe is provided with a centre rest, follower rest, 2 point centres, a full set of change gears, and necessary wrenches.

When desired, blocking will be furnished at an extra price, to raise head and tailstocks, and tool post to increase the swing of either size lathe 4in.

It can be attached or detached at convenience, but must be specially fitted to the Lathe by the makers, as the fittings are not interchangeable.

For Sizes and Prices, see next page.

The "Star" Screw-cutting Engine Lathes—*continued.*



2183 With Compound Rest and Foot Power.

SPECIFICATIONS.

	$4\frac{1}{2}$in. Centre.	$5\frac{1}{2}$in. Centre.
Hole in Head Spindle	$\frac{17}{32}$in.	$\frac{21}{32}$in.
Front Bearing of Spindle	$1\frac{5}{16}$in. by $3\frac{1}{8}$in.	$1\frac{9}{16}$in. by $3\frac{7}{8}$in.
Back Bearing of Spindle	1in. by $1\frac{5}{8}$in.	$1\frac{1}{8}$in. by $2\frac{3}{16}$in.
Cone Pulley Diameters	$3\frac{1}{8}$in., $4\frac{1}{4}$in., $5\frac{3}{8}$in.	4in. $5\frac{1}{2}$in., 7in.
Width of Belt	$1\frac{1}{4}$in.	$1\frac{1}{2}$in.
Ratio of Back Gearing	7 to 1	8 to 1
Diameter of Tail Spindle	1in.	$1\frac{1}{8}$in.
Size of Pulleys on Countershaft	6in.	8in.
Speed of Countershaft	200	200

DIMENSIONS AND PRICES. (NETT AND CARRIAGE FORWARD).

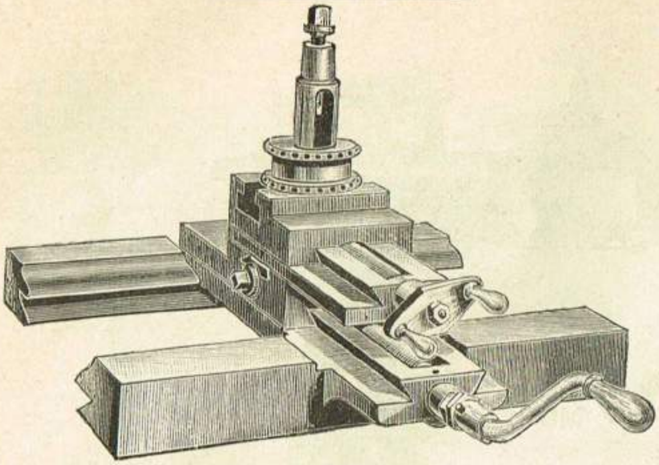
Description.	No. 10.	No. 20.	No. 30.	No. 40.	No. 50.	No. 62.
Swing over Bed	9in.	9in.	11in.	11in.	11in.	13in.
Distance between Centres	24in.	36in.	36in.	48in.	60in.	42in.
Length of Bed	46in.	58in.	62in.	74in.	86in.	72in.
Nett Weight	405lb.	440lb.	650lb.	700lb.	750lb.	1,165lb.
PRICE, with Compound Rest and Foot Power, or with	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Compound Rest and Countershaft	29 5 0	31 15 0	41 5 0	43 15 0	46 5 0	65 0 0
" with Compound Rest, Countershaft, and Oil Pan	31 5 0	34 0 0	43 15 0	46 10 0	49 5 0	68 5 0
" Countershaft (when sold extra)	2 10 0	2 10 0	3 15 0	3 15 0	3 15 0	—
" Blocking	2 10 0	2 10 0	3 15 0	3 15 0	3 15 0	—

Blocking must be fitted to the Lathe by the makers, as the fittings are not interchangeable.

Barnes' Screw-cutting Lathe Accessories.

(Nett and Carriage Forward.)

Compound Rest.

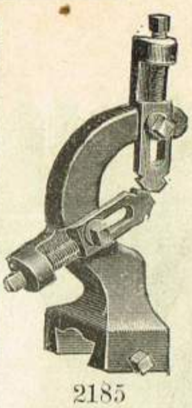


2184

We can now supply any of the Screw-cutting Lathes with Compound Rest as shown in cut, in place of the ordinary rest. The extra cost is :—

No. $4\frac{1}{2}$	£1 17 6
„ 5	2 5 0
„ $5\frac{1}{2}$ and 13	2 17 6

Follower Rest.



2185

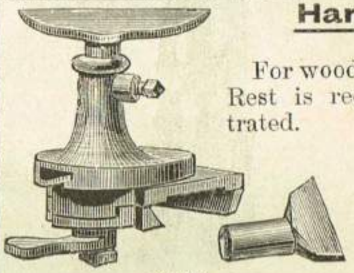
We can furnish this Rest for the following lathes :—

PRICES.

No. $4\frac{1}{2}$	11/6
„ 5	13/6
„ $5\frac{1}{2}$ and 13 ...	18/-

In ordering please state whether required for plain or compound rest lathes.

Hand Rest.



2186

For wood-turning a Hand Rest is required, as illustrated.

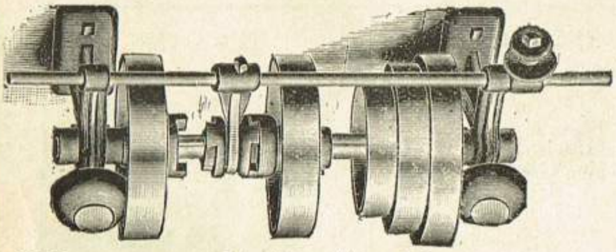
PRICES.

No. $4\frac{1}{2}$	11/6
„ 5	13/6
„ $5\frac{1}{2}$ & 13	16/-

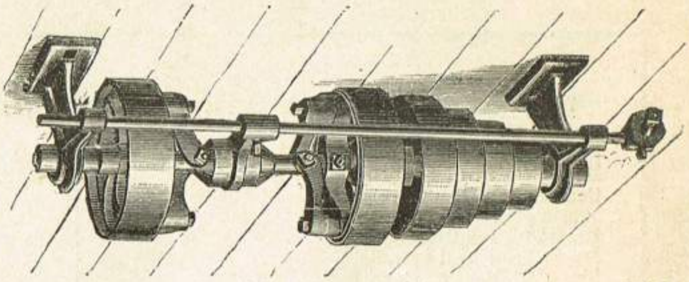
Taps Suitable for Barnes' Lathe Mandrils.

2187					
	Nos.	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$
	Prices, Taper Plug or Bottoming	4/-	6/6	8/6	10/6

Countershafts for Barnes' Lathes.



2188 For Nos. $4\frac{1}{2}$ and 5.



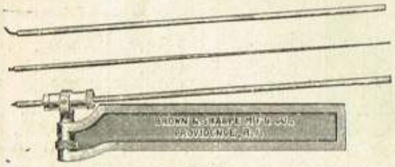
For Nos. $5\frac{1}{2}$ and 13. 2189

The above cuts represent Countershafts which we supply for Barnes' Lathes, when it is desired to work them by steam power.

PRICES.

Countershaft for Nos. $4\frac{1}{2}$ and 5...	£3 7 6
„ „ $5\frac{1}{2}$ „ 13...	4 15 0

Lathe Test Indicator.


BROWN & SHARPE MFG. CO.
PROVIDENCE, R.I.

2190

The Lathe Test Indicator is for use in setting centrally any point or hole in a piece of work to be operated upon in a lathe or upon a face-plate. It is also well adapted for testing lathe centres, shafting, or other work held between centres, the inside or outside of cylinders, pulleys, &c., and all work of a similar class.

The Tool is made of steel, and is of such a size as to be held conveniently in the tool post of a lathe. The bar, $\frac{11}{16}$in. wide and $\frac{3}{8}$in. thick, is drop-forged and formed at the end to receive a universal joint for supporting a finger-holder. The universal joint recommends itself by its simplicity of construction. A clamp-nut is provided for clamping the joint when it is desired to have only a vertical movement to the finger, as in testing pieces held between centres, the inside or outside of pulleys, &c. The bushing, which holds the finger, is split, thus allowing the finger to be adjusted to lengths required, and clamped in position. The bar and all wearing parts are hardened.

The finger-holder is furnished with two fingers, either one of which can be quickly attached ; one finger is ground to an angle of 60 degrees, and the other is bent for inside and outside testing. A spiral spring is provided for holding the finger against the work with an even pressure.

Price 12/6 each.

Screw-cutting, Sliding, and Surfacing Lathe.

This is a light and handy little tool, designed for the use of Amateurs, Model Makers, and others. There are arrangements for boring, the saddle having slots for bolting on work. It has Machine Cut Back Geared Head Stock, with Steel Tapered Mandrel running in Gun-metal Bearings, and an Adjustable Cone to the Back Bearing. The Head Stock is of an improved and extra strong design. There are supplied with the Lathe a Face Plate, a Catch Plate, a Hand Rest, and T-piece, and necessary Spanners.

SPECIFICATION.

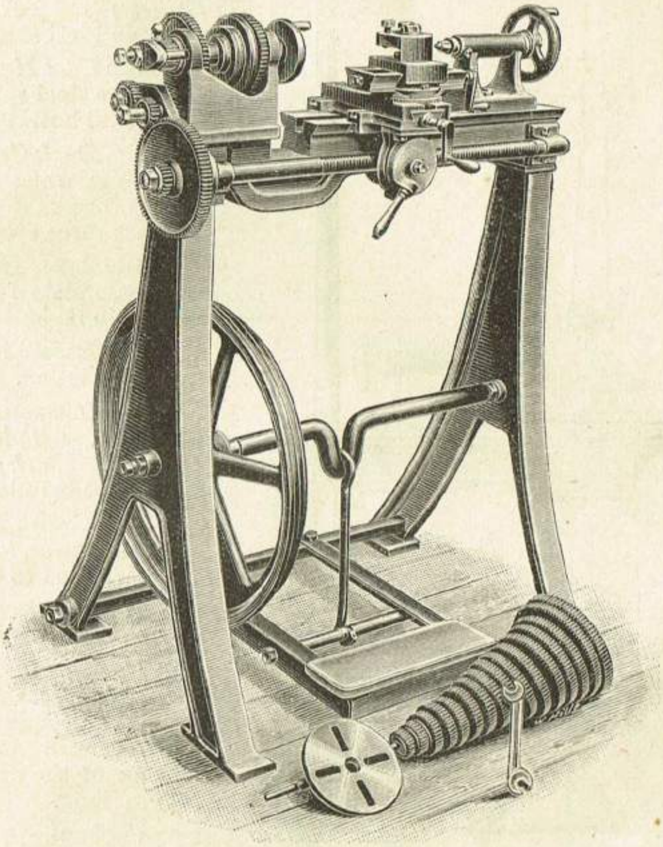
Bed width gap 2ft. 6in. long, 3½in. wide by 3in. deep.

Gap 3in. wide and 1⅝in. deep.

Swings 11½in. diameter.

Headstock has 3 speed cone for gut band, and sets over for taper turning. Back gear is 12 pitch cut from the solid.

Steel leading screw, ⅝in. diameter, ¼in. pitch.



2191

SPECIFICATION.

The lathe takes between the centres 15in.

Slide rest has well proportioned slides with square threaded screws, and the top slide swivels in the circular slot to any angle.

Hardened steel centres to treadle motion.

Heavy balanced flywheel.

Substantial treadle motion.

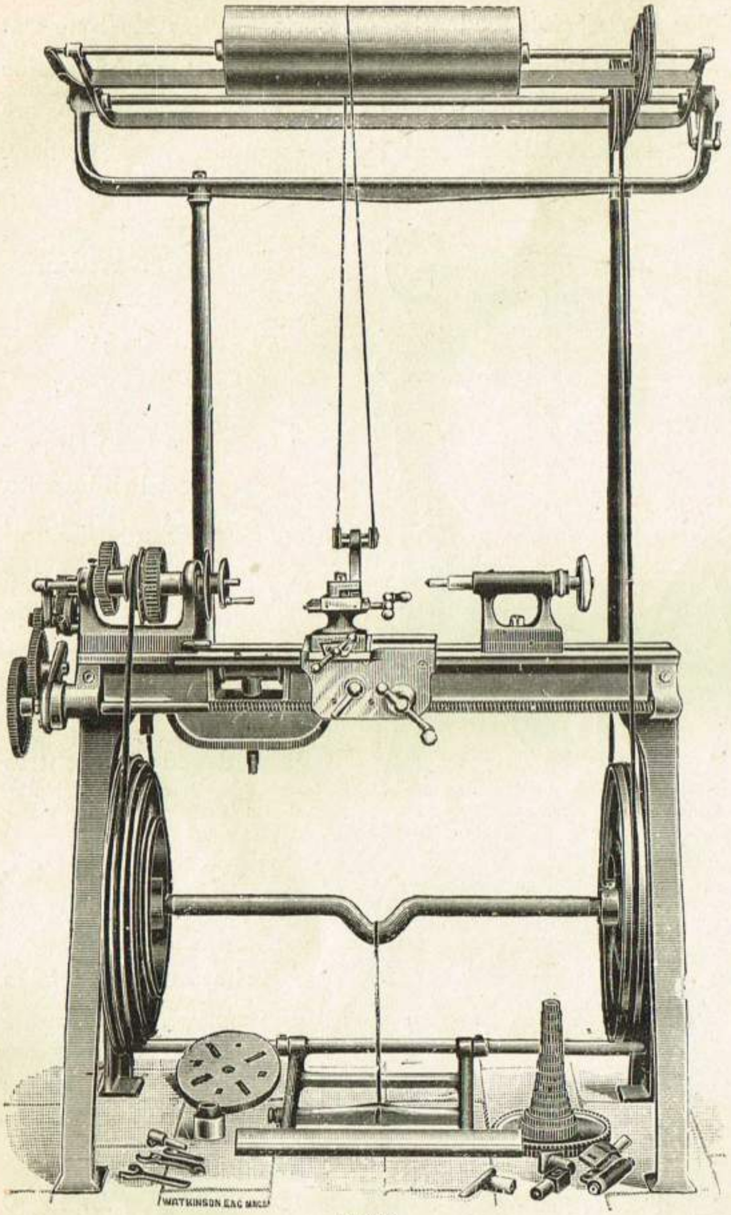
Plain Bench Lathe, as above, consisting of 2ft. 6in. Gap Bed, Back Geared Head Stock, Poppet, and 2 Short Legs for Bench, and including Face Plate, and Catch Plate	£7 10 0
Extra for Swivel, Compound Slide Rest, as shown	£2 10 0
Extra for 3 Speed Treadle Motion, adapted for Gut Band	£2 5 0
Self-acting Sliding and Screw-cutting Lathe, as above, 4in. centres by 2ft. 6in. Gap Bed, complete with 22 Cut Change Wheels, 14 Pitch, all Machine Cut	£16 10 0
Ditto ditto with 3ft. 6in. Gap Bed	£18 10 0

N.B.—The above Lathe can be fitted with Overhead Driving Motion for power in place of Treadle Motion at the same price.

Nett Cash. Carriage Forward. Packed for Shipment 5 per cent. extra.

Screw-cutting and Ornamental Turning Lathe.

For Electricians and Scientific Instrument Makers, etc.



2192

This is a *high-class Lathe*, built for mechanicians who require a *tool of superior workmanship and capability.* In addition to all the ordinary functions of a Lathe, *Wheel-cutting*, *Fluting*, *Milling*, *Grinding*, *Drilling*, and what is termed *Ornamental Turning* may be done by it.

It is Self-acting, Sliding, and Screw-cutting; has reversing gear for cutting right and left screws.

The Fast Headstock is double-geared, and has a steel spindle running in conical gun-metal bearings.

The Back Gear is cut from the solid. The *Cone*, when made grooved, has four speeds for ⅜in. round gut, and when made flat, has three speeds for 1in. belt.

The Loose Headstock is built to slide on a base plate for taper sliding, and has steel spindle and thrust screw.

The Saddle is fitted with quick hand traverse motion.

The Compound Slide Rest is specially adapted for *Sliding, Hand-turning and Overhead Work;* it will swivel to any angle, and is indexed to 90°.

The Crank Shaft runs on hardened conical centres, and the driving wheel is counterpoised to balance the treadle.

The Overhead Cutting Apparatus is mounted on pillars, supported from the Lathe.

It is of the Swing Frame Type, the drum, three-speed cones, and two shafts are arranged to maintain a uniform tension of the driving cord. The Drum is 20in. long.

Vertical and Horizontal Cutting, Grinding and Drilling Spindles are contrived to fix on the Compound Slide.

A Division Plate and Spring Pin is supplied for spacing and dividing work on the Lathe Centres.

This Lathe may be had either with or without Overhead Motion and the apparatus specially connected with it, and in either case, for foot or power, or for both.

The *Centres* are 4½in. high ; *Bed*, 4ft. long with gap ; price includes *8in. Face Plate, Driver Plate, Compound Rest, Tool Post, Spanners, 22 Change Wheels*, and *Index Plate for Screw-cutting.*

Weight, without Overhead, about 4 cwts. Weight, with Overhead, about 5 cwt.

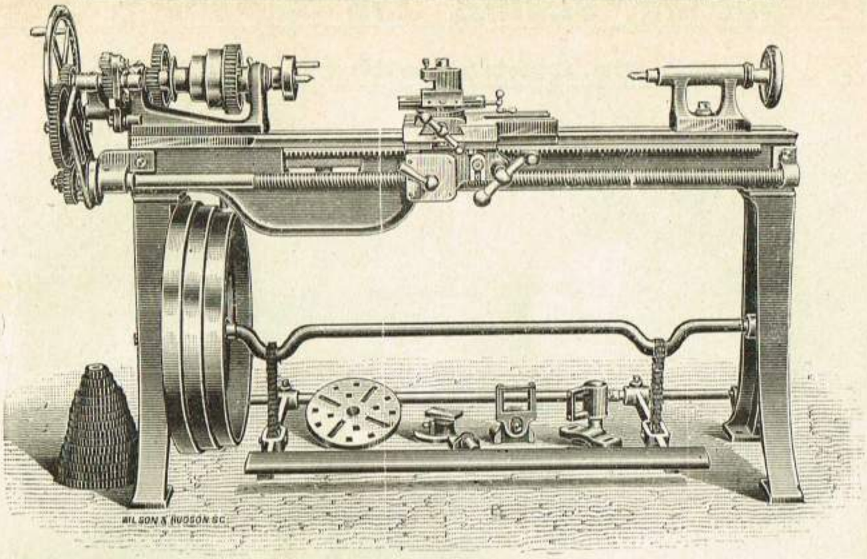
PRICES.

Self-acting Sliding and Screw-cutting Lathe, with Overhead Cutting Motion with Dividing Plate and Catch, as illustration	£31 0 0
Self-acting Sliding and Screw-cutting Lathe, Foot Power only, without Overhead Motion	22 10 0
Self-acting Sliding and Screw-cutting Lathe, Steam Power only, with Countershaft ...	22 10 0
Vertical Cutter Spindle	2 0 0
Horizontal Cutter Spindle	1 10 0
Top Drive for Steam Power, when supplied extra to Treadle Lathe	1 10 0

Nett and Carriage Forward.

Screw-cutting and Sliding Lathes.

5in. Centres.



Made for Foot-power, or with Countershaft for Power, at same prices.

2193

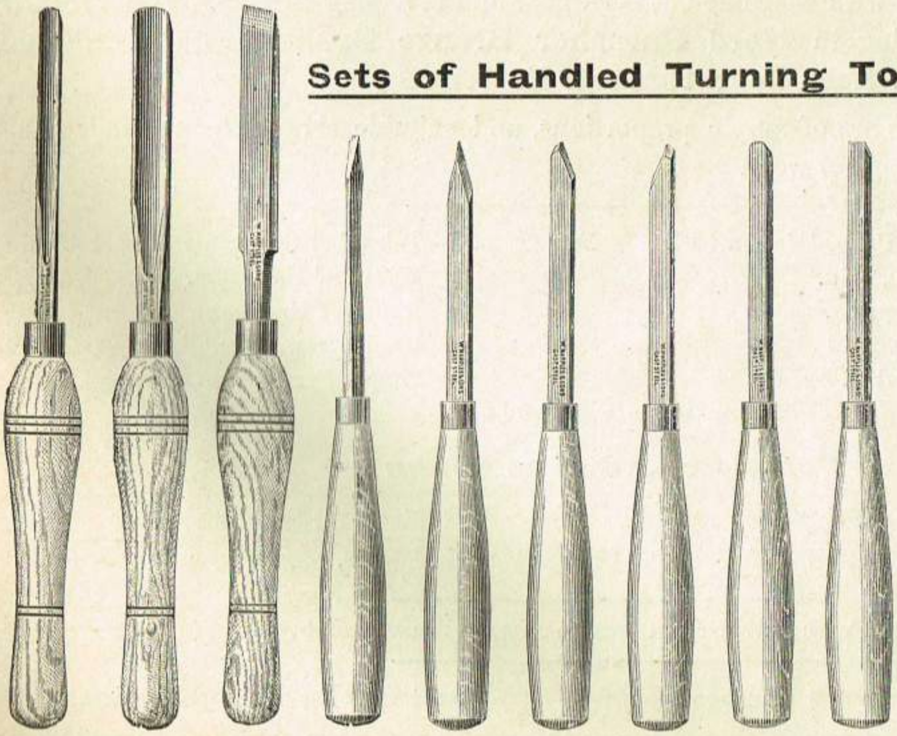
These Lathes are built from well-proportioned patterns, and no device which could add to their usefulness has been neglected. They are convenient in the arrangement of their parts and accurately fitted. The weight is sufficient to ensure rigidity and steadiness in work. The Saddles have ⊥ slots for the purpose of bolting down articles to be bored; they are fitted with compound slide-rests of the most approved pattern, and have a quick hand-traversing motion. The fast head-stocks are double geared (gear cut out of solid) or single speed; have conical necks and steel spindles. The loose head-stocks, fitted with steel spindles and square-thread screws. Each Lathe includes driver-plate, face-plate, turning rests, spanners, and 22 change wheels.

They are made for foot- or machine-power, self-acting sliding and screw-cutting, with gap or straight beds of any desired length; or double-speed or single-speed hand-turning Lathes, with or without compound slide-rest, and can be fitted with overhead grinding, wheel-cutting, drilling, and milling apparatus.

The illustration shows treadle and fly-wheel for foot power and hand-wheel fitted to back gear for very slow work. These Lathes can be had with top drive for power. As Foot Lathes the fly-wheel shafts are carried on anti-friction bearings.

Height of Centres.	Length of Bed.	To admit between Centres.	Price, Double Geared.	Extra length of Bed, per ft.
5in.	5ft.	2ft. 6in.	£32 0 0	£1 10 0

Sets of Handled Turning Tools.



2194

Set of 12 Handled Wood Turning Tools, assorted, 13/- per set.

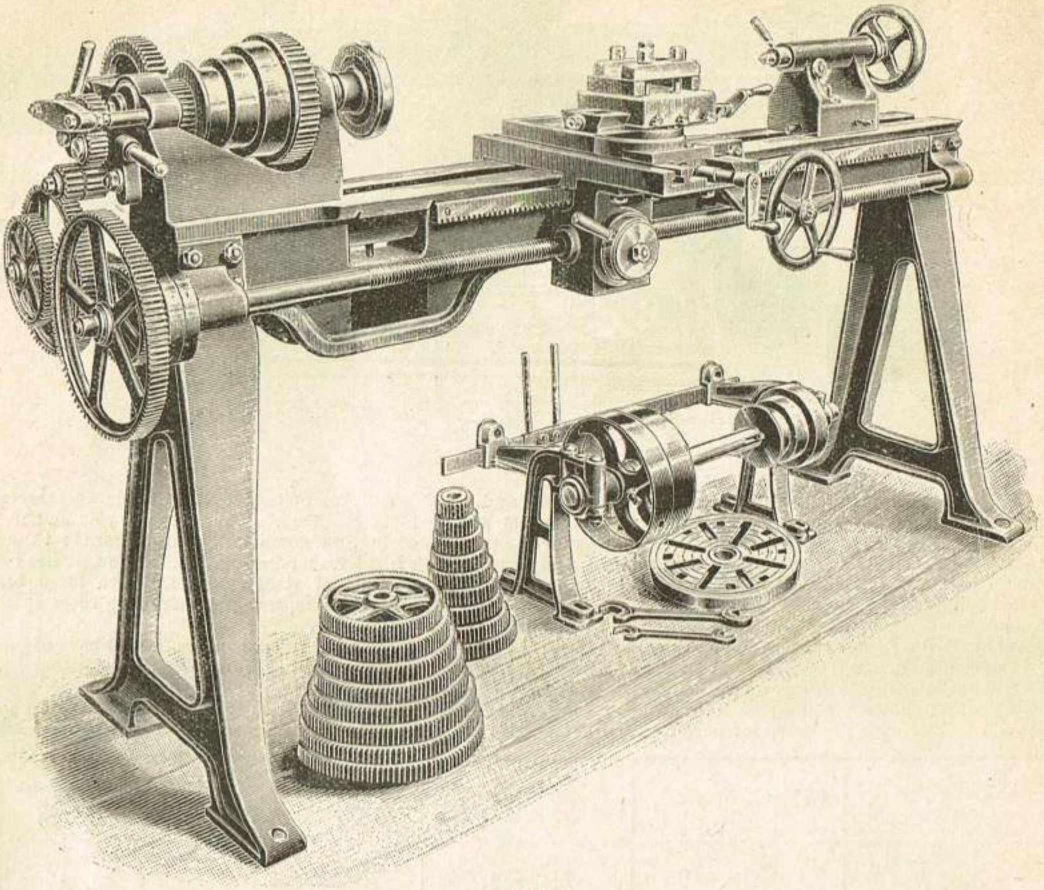
Set of 12 ditto, assorted, for Wood and Metal, 13/- per set.

Set of 6 Handled Wood Turning Tools, 7/- per set.

Set of 6 Handled Metal Turning Tools, 6/6 per set.

Screw-cutting, Sliding, and Surfacing Lathe.

No. 6. 6in. Centres, with 6ft. Gap Bed.



2195

This Lathe is fitted with machine-cut back gear and reversing motion. Has **Hollow Steel Mandril,** running in **Hard Phosphor Bronze Bushes,** with **Hardened Ball Thrust,** and **¾in. hole clear through its length.**

All bearing surfaces are of ample proportions, and suitable arrangements made at all necessary points for taking up wear.

DIMENSIONS—Three Speed Cone, 1½in. on face.
Mandril Nose, 1½in.
Back Gear, 8 pitch.
Reversing Gear, 10 pitch.
Change Wheels, 10 pitch.

DIMENSIONS—Takes between centres, 3ft. 9in.
Width of Gap, 5½in.
Depth of Gap, 4½in.
Lead Screw, 1¼in. dia. by ¼in. pitch.
Poppet Barrel, 1½in diameter.

Approximate weight 10 cwt.

Price of Complete Lathe, as shown - £35.

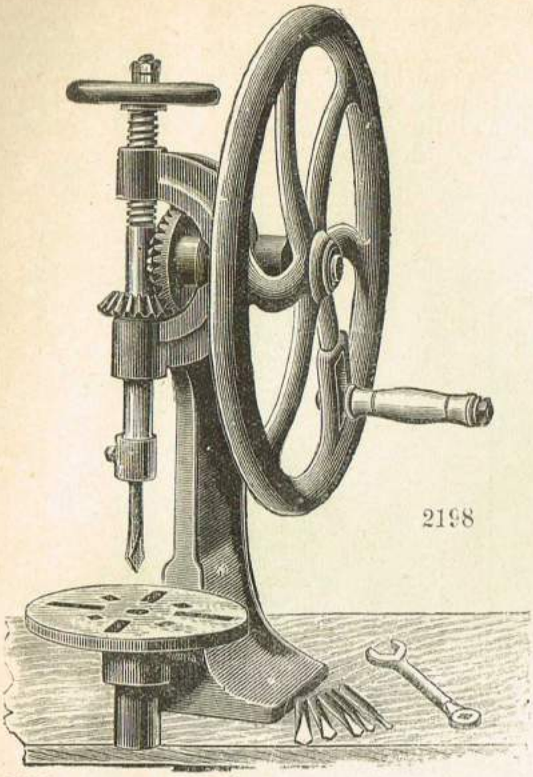
Extra for Set Over Poppet, £1 10s. Extra for Back Shaft, £5.

Extra for Machine-cut Change Wheels, £3 15s.

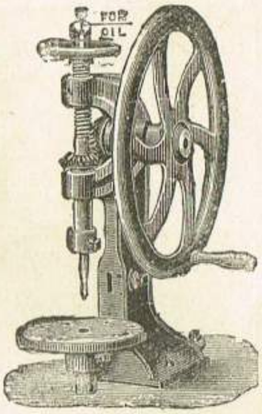
N.B.—This Lathe is also fitted with anti-friction treadle motion in place of overhead at the same price.

Packed for Shipment 5 per cent. extra. **Nett and Carriage Forward.**

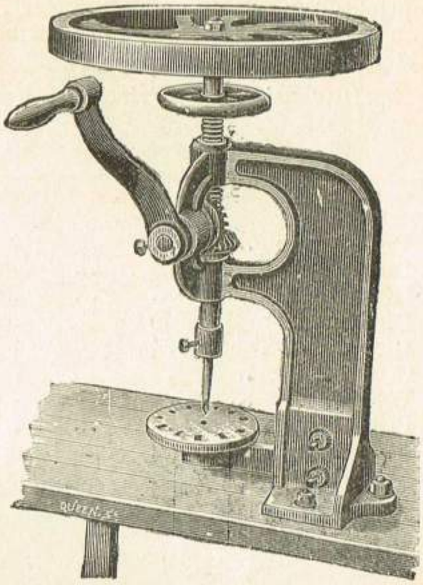
Drilling Machines. (Nett and Carriage Forward.)



2198



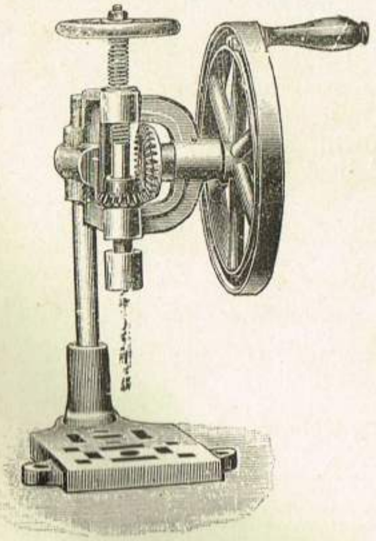
2196



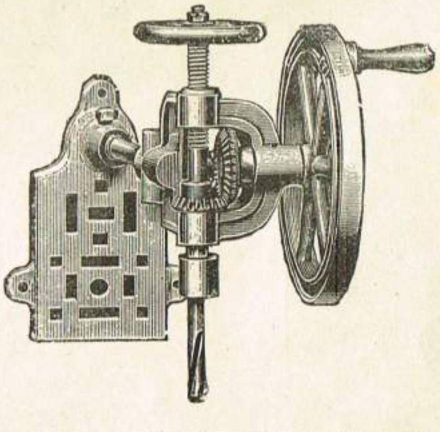
2197 & 2199

2196 Small Bench Drilling Machine with Fly Wheel on side, weight 25lb. Will drill holes up to ⅝in., £1 10s.
2197 Same Size and Weight as No. 2196, but with Wheel on Top, £1 12s.
2198 Bench Drilling Machine, will drill up to ¾in., weight 80lb,, £2 5s.
2199 Same Size and Weight as No. 2198, but with Wheel on Top, £2 10s.

Bench Drilling Machine.



Same Machine Fixed to Wall.



2200

Drill holes up to	Depth of Feed.	Total Height.	Weight.	Diameter of Fly Wheel.	PRICES.
⅝in.	2in.	20in.	36lb.	13½in.	£1 14 0
1in.	4in.	30in.	1cwt. 1qr.	20in.	£3 8 6

Improved "Handy" Bench Drills

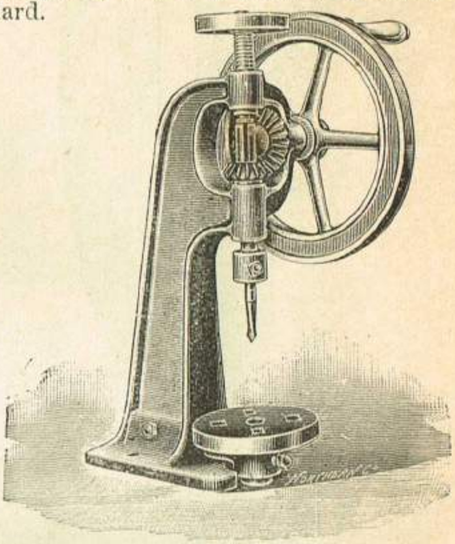
For Blacksmiths, Plumbers, Wheelwrights, etc.

These Drills are built from new and well-proportioned designs, and have a maximum of strength in proportion to the weight. The thrust bearing is hardened cast steel. They can be supplied with fast and loose pulleys for machine power. The table is carried on a sliding bar, which is fixed in position by a set screw, or the table and bar may be removed from the standard.

Made in two sizes and distinguished by letters E and F.

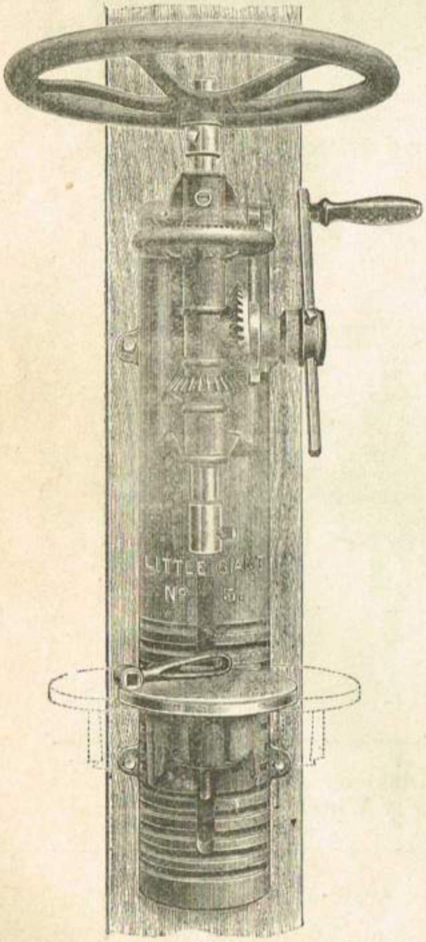
The Dimensions and Prices are as under :—

	2201	2202
	Letter E.	Letter F.
Drills up to	½in.	¾in.
Depth Spindle Travels	2 ,,	2½ ,,
Diameter of Spindle...	¾ ,,	1 ,,
Distance from Spindle to Pillar ...	3 ,,	4½ ,,
Distance of Table	5¾ ,,	7½ ,,
Gear	3 to 2	Equal
Weight	46lb.	72lb.
Price, Hand-power	35/-	50/-
,, Machine Power (fast and loose pulleys and hand wheel)...	42/6	58/6



2201 and 2202

"Little Giant" Blacksmiths' Drill, No. 5.



2203

2203 Price......................................40/-

The cut shows one of our latest productions in Blacksmiths' Upright Drilling Machines.

Although we have made the price LOW, nothing has been left undone in quality or workmanship to make it the MOST PERFECT, COMPACT, and thoroughly made drill on the market for the price.

General Dimensions and Points.

Drills to 1in. diameter hole.

Drills to centre of 15in. circle.

Table is removable for drilling tire, or can be swung to side. Adjustable to height.

Bed is of iron, cast in one piece, giving machine

Strength and Stiffness.

Feed has a run of 4in.

Table has an adjustment of 11in.

Spindles are made to receive ½in. shanked drills.

"Little Giant" Drilling Machine, No. D5.

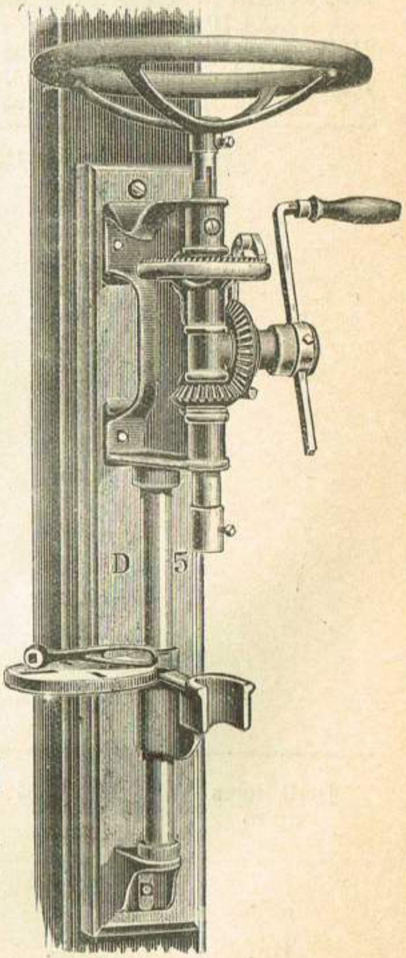
2204 Price.......................................35/-

General Dimensions.

Drills to 1in. diameter hole. Drills to centre of 14in. circle. Swinging Table (either side). Easily adjusted to height.

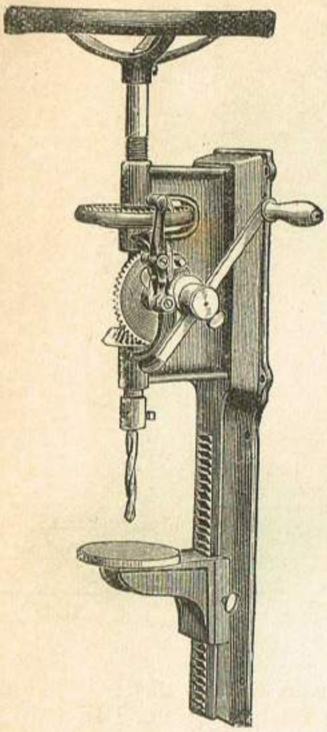
Spindle is made of steel and has Tool Steel Set Screw hardened and tempered.

Spindles are made to receive ½in. Shanked Twist Drills.

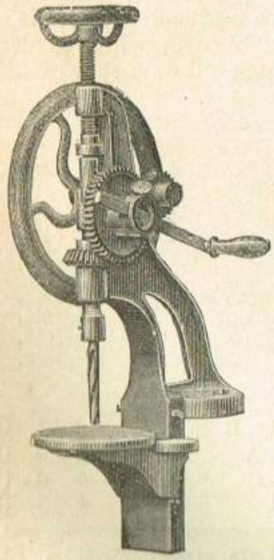


2204

Improved Upright Self-feeding Drills.



2211 No. 10



2212 No. 9

2205 No. 0. This size is intended for small, accurate work, and is a desirable tool for amateurs, electrotypers and experimenters. The spur gearing is turned, finished, and accurately cut. Spindle bored to receive ¼in. straight shank drills and turned tapering on end to receive small chuck for wire drills; has three grades of feed. Drills from 0 to ⅜in. hole.

Length	26in.
Weight	30lb.

Price £2 18s. 6d. each.

2206 No. 1. The spindle takes ½in. straight shank drills; has three changes of automatic self-feed, instantly adjusted from fine to coarse. Drills from 0 to 1in. hole.

Length...	42in.
Weight...	100lb.

Price £3 3s. each.

2207 No. 1½. This Machine has three grades of feed, instantly adjusted by a thumbscrew. A fast or slow speed is given to spindle by changing handle from **A** to **B**, as occasion requires. This arrangement largely increases the capacity. Drills to the centre of an 11in. circle. Spindle bored for ½in. shank drills. Drills from 0 to 1¼in. hole.

Length	44in.
Weight	120lb.

Price £4 each.

2208 No. 2. These Drills have all the late improvements. The swing table, as applied to them, will be found useful in many ways, and much more convenient than the old method of driving them out with a hammer; it is out of the way when not in use, and can be quickly put in position. Drills to centre of 15in. circle. Spindle bored to take ½in. shank drills. When ordered for power attachment, pulleys are fitted on outer end of shaft **A**; diameter of pulleys, 8in.; for 2¼in. belt; speed of shaft **A**, for ordinary work, about 375 turns per minute. Drills from 0 to 1½in. hole.

Length	54in.
Weight	160lb.

Price, without Pulleys, £5 12s. 6d. each.
" with Pulleys, £6 each.

2209 No. 3. This Machine has cut gears so arranged that quick or slow motion is given to spindle, as light and heavy work may require, and is a desirable tool for machine shop or factory which is largely taking the place of higher cost machines. Drills to centre of 16in. circle; spindle takes drills $\frac{41}{64}$in. shank. Can be used as hand and power, or either independently; pulleys, 10in. by 2½in. Speed for ordinary work, about 180 turns per minute. Drills from 0 to 1½in. hole.

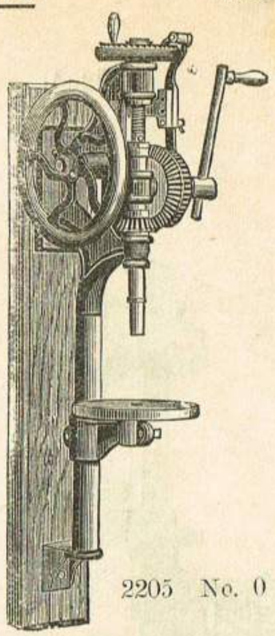
Length	65in.
Weight	250lb.

Price, without Pulleys, £8 10s. each.
" with Pulleys, £9 10s. each.

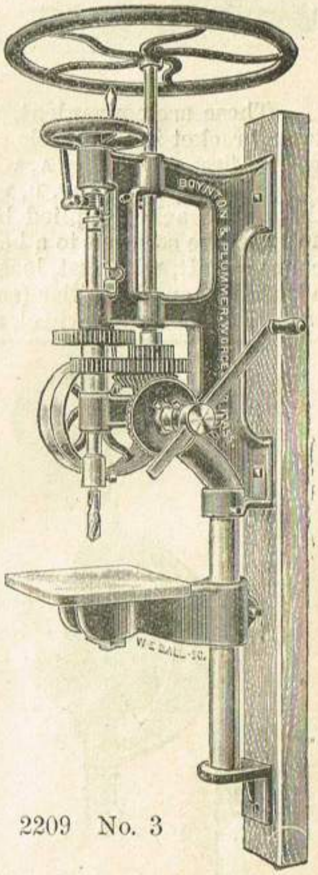
2210 No. 4. This Drill has turned and accurately cut spur gears arranged to slide on shaft for fast or slow motion, frame is cast in one piece, has the latest improvements, and is complete in all its appointments. Balance wheel is on an independent shaft, leaving the spindle to be worked quickly by side hand wheel. Drills to centre of 15in. circle. Spindle fitted to $\frac{41}{64}$in. straight shank drills. Drills from 0 to 1½in. hole.

Length	54in.
Weight	190lb.

Price £8 each.



2205 No. 0



2209 No. 3

2211 No. 10. The frame of this Machine is all iron, cast in one piece. It is strong, very light running, and easily handled. The feed has a run of 4in., with three grades of speed. The drill can be used horizontally, if desired. Drills to centre of 11in. circle. Spindle takes ½in. straight shank drills. Drills from 0 to ⅝in. hole.

Length	44in.
Weight	100lb.

Price £2 17s. 6d. each.

Boynton's Upright Bench Drills.

The spindles of these Drills are bored to receive ½in. straight shank drills; have hand feed, drill holes in centre of 10in. circle, tables have four adjustments for position. This, and all sizes of our Drilling Machines, will be furnished, when so ordered, with any of our drill chucks fitted to spindle. The use of these chucks makes a great saving in price of small drills. We recommend them for all sizes below ½in.

2212 No. 9. Drill holes ⅛in. to ⅝in. Has fly-wheel and back gear. Weight 75lb. **Price £2 2s. each.**

Nett and Carriage Forward.

Drilling Machinery—*continued.*

(Carriage Forward.)

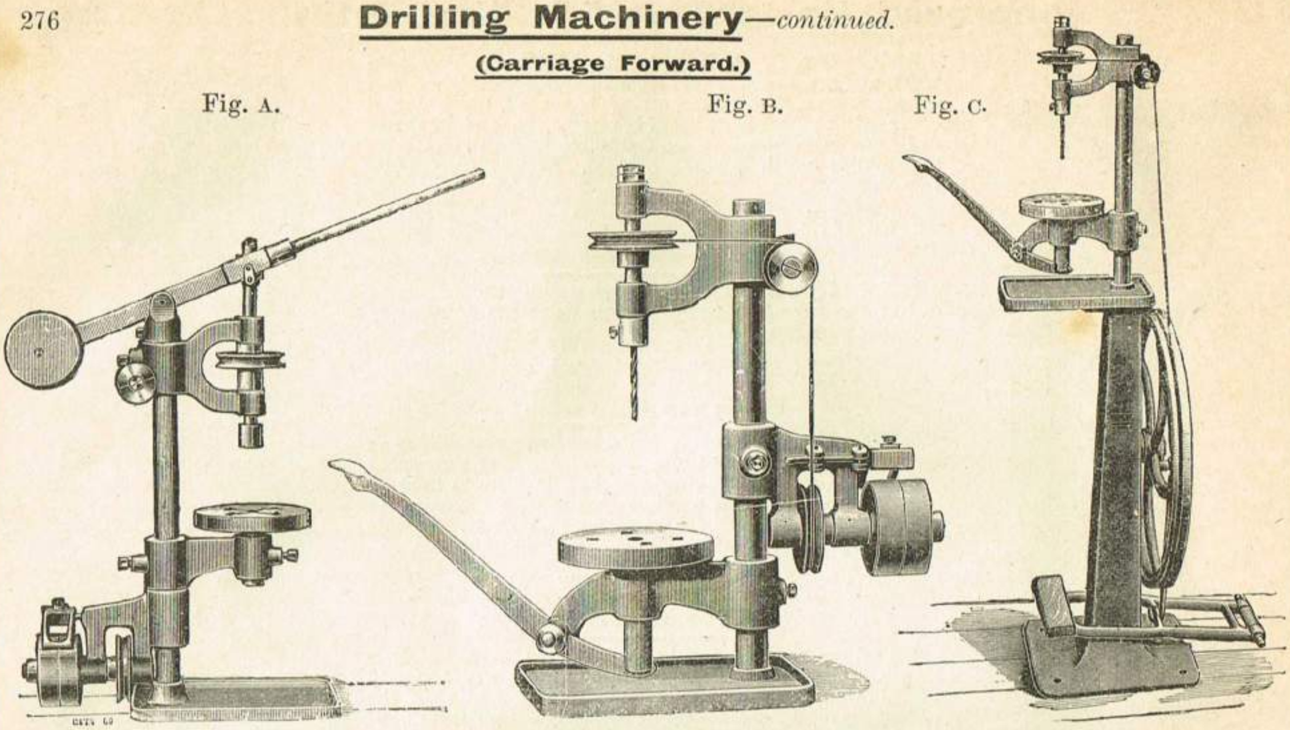
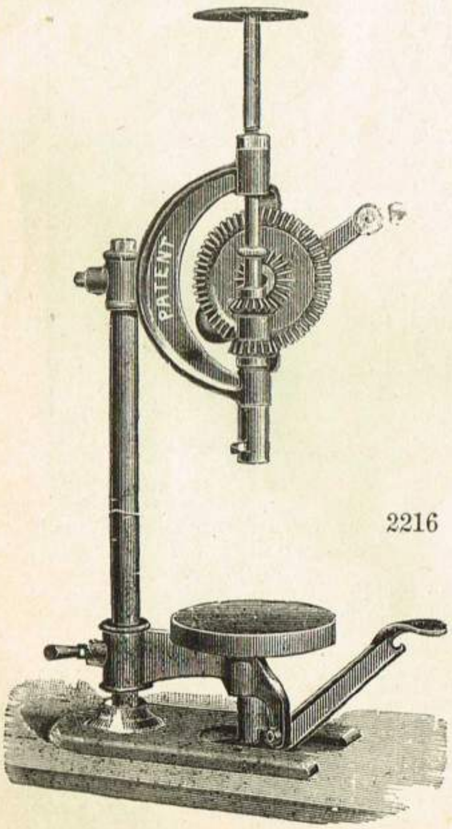


Fig. A.
Fig. B.
Fig. C.

No. 3 Drills.

These are convenient, light-running tools, and are supplied for either steam or foot power. The table bracket is adjustable on the pillar to the size of work to be drilled. The feed is arranged in two ways—first, as in Fig. A, where the drill spindle is moved downwards by the counterpoised lever at the top; second, as in Fig. B, where the work is moved up to the drill by pressure on the lever attached to the table bracket, applied by the left elbow, or by a wire connection to the foot. The base forms a tray, and may be screwed to a bench, or to the standard pillar, as shown in Fig. C. As a power-drill there is a countershaft, with fast, loose and grooved pulleys, and belt guide, carried in a suitable arm, which is also adjustable on the pillar (see Figs. A and B). As a treadle-drill (Fig. C.) it is mounted on a stand with treadle and balance wheel, and is without the countershaft for steam-power.



2216

Speed of countershaft, 500 revs. per minute.
Will drill holes up to ¼in. in diameter.

Distance between Drill Spindle and Standard	4in.
Will admit between Table and Drill	7in.
Diameter of Table	5in.
" Pulley on Drill	3½in.
" Balance Wheel for foot (Fig. C)	1ft. 6in.
" Fast and Loose Pulleys	4in.
Total Height ... ... as per Fig. A, 2ft. 6in.; Fig. B,	1ft. 10in.
" as per Fig. C	4ft. 10in.
Weight—Treadle Drill (as Fig. C)	1cwt. 1qr. 3lb.
" Bench Power Drills (as Figs. A & B)	1qr. 18lb.

PRICES.

2213	Bench-Power Drill, table feed, as Fig. B ...	£2 15 0
2213A	Bench-Power Drill, top feed, as Fig. A ...	3 10 0
2214	Foot-Power Drill, table feed, as Fig. C ...	4 0 0
2215	Foot-Power Drill, top feed, as Fig. A ...	4 15 0

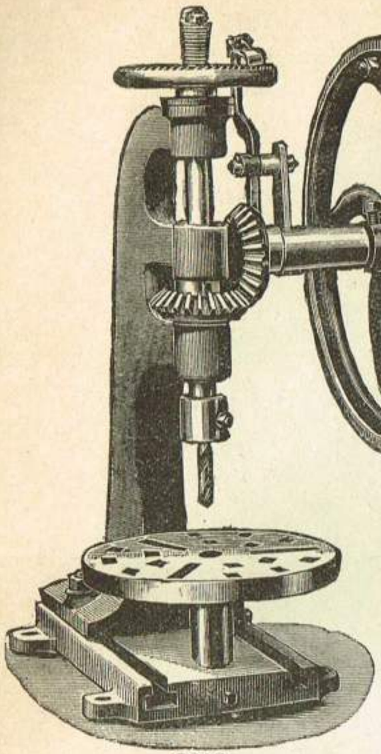
Patent "Combination" Bench and Table Drill, No. 1.

This Tool, as illustrated, is a small Bench Drill. It has a rising table, carried on a swinging arm, adjustable vertically on the pillar, and moved upwards by elbow pressure on the lever connected with it, or by wire connection to the foot, its own weight causing it to return when the pressure is relieved. It has two rates of speed, the change from quick to slow being effected by moving the collar carrying the sliding key upwards, and reversing this for changing from slow to quick speed. A centre mark is made on the boss of each pinion, and when these are in line the key can be slid from one pinion to the other. By removing the drill head from the pillar, it can be used as a Breast Drill. Will drill holes in metal up to $\frac{5}{16}$in. diameter. Four drill bits are supplied.

Distance between pillar and drill spindle, 3¾in. Total height 2ft. 2in. Weight 17lb. Price £1 5s.

If fitted with 3-jawed Chuck for holding Round Shank Twist Drills, price £1 10s.

Improved Self-acting Feed Hand Power Bench Drilling Machines.



2218
Weight 1¾cwt.

These are high-class, substantial, and well-fitted tools of new and improved design.

The Drill Stand is of improved design, being of the box section type, which ensures a firm, strong and rigid machine, the base of which is planed perfectly square with the spindle, bolted on to planed base plate which secures accuracy in Drilling.

For drilling large castings, the machine can be brought forward to front of base plate in which **T** slots are provided for this purpose. The spindles are made of steel, with hardened ends to receive the pressure, so also is the screw, and in each case they are turned perfectly true, and work in three good long bearings.

The feed is of a very simple form, being given by hand wheel at the top, and is made self-acting by catch motion, which is very simple and cannot get out of order.

The Round Table is adjustable so that the articles to be drilled can be brought up to the drill instead of having the spindle so low down. The table is also easily removed for drilling large articles.

We have a very good form of Self-Centering Vice to fit into table socket, and which will be found to be most useful for Plumbers, Gas and Steam Fitters, &c. Any article placed in this vice is always drilled in the centre without using the centre punch, or any setting whatever, thus saving a lot of time.

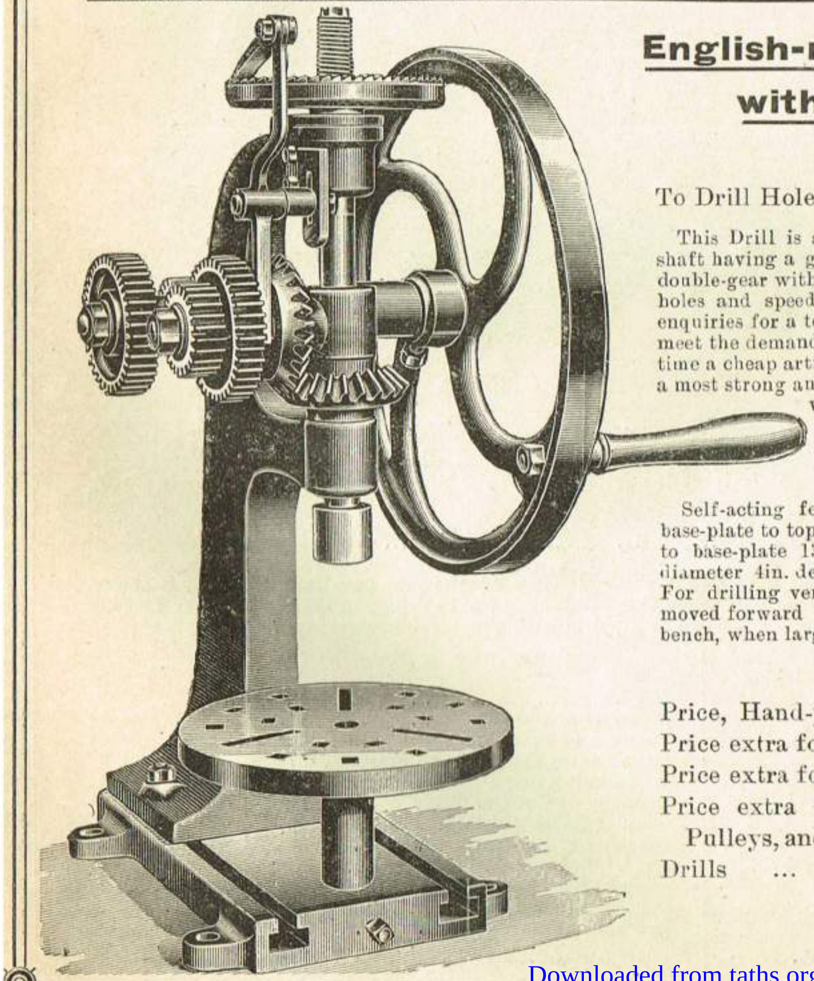
Specification.

Self-acting Feed Hand Power Drills, will drill 1in. holes, base plate 18in. long and 9in. wide; height of machine from bottom of base plate to top of feed wheel 30in.; will admit an article 14in. diameter, will admit 12in. between spindle and base plate, and round table is adjustable for smaller work, spindle 1¼in. diameter, table 12in. diameter, and will rise and fall 4in. Drills 16/- per doz.

2217 Self-acting Drill on Stand.	2218 Self-acting Drill as Illustration, hand power.	2219 Price of Drill without Circular Table.	2220 Price of Machine without Circular Table and Base Plate.	Extra for Self-Centering Vice.
£5 15 0	£4 15 0	£4 7 0	£3 15 0	£1 6 0

Nett and Carriage Forward

English-made Drilling Machines, with Self-acting Feed.



2221

To Drill Holes 1½in. diameter by Hand or Steam Power

This Drill is specially recommended for hand and power, the shaft having a good bearing to receive pulleys. Specially made double-gear with two speeds. Geared to receive power to drill large holes and speed for small holes. Having constantly received enquiries for a tool of this description, we have constructed this to meet the demand. This will be found a most useful and at the same time a cheap article; it is made on the very best principles, and is a most strong and substantial machine for Coach Builders, Wheelwrights, Plumbers, and Jobbing Shops.

Specification.

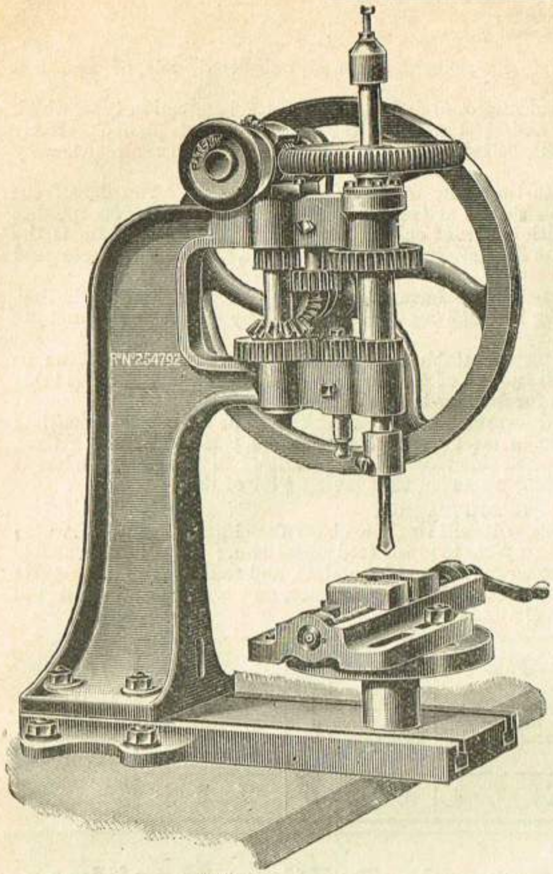
Self-acting feed, base-plate 18in. long, height from bottom of base-plate to top of feed wheel 30in., admits in depth from spindle to base-plate 13in., admits in diameter 14in.; drill holes 1¼in. diameter 4in. deep. Round table 12in. diameter, rise and fall 4in. For drilling very large articles the body of the machine can be moved forward in Tee slots in base-plate until it overhangs the bench, when large articles can be drilled from the floor.

	£	s.	d.
Price, Hand-power	5	15	0
Price extra for Pulleys...	0	15	0
Price extra for Vice	1	6	0
Price extra if fitted with Cone Driving Pulleys, and Top Driving Motion	2	15	0
Drills ... ... per doz.	0	16	0

Approximate Weight 2¼cwt.

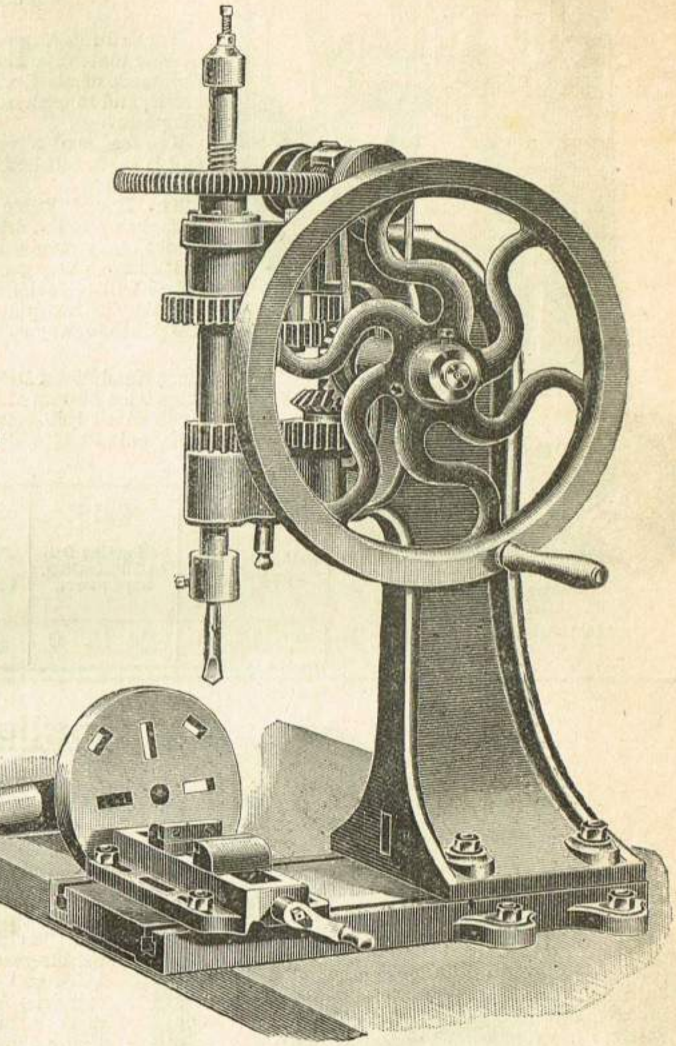
Improved Drilling Machines.

(Carriage Forward.)



2222

Drilling Machine.—Self-feed, double-geared, with fast and slow speed, to drill holes with ease up to 1in. diameter, with planed bed-plate, having slots to allow Machine to be drawn forward when larger diameters are to be drilled, also fitted with patented eccentric self-feed motion by worm, $\frac{1}{4}$in. pitch; is constant in its action, so that a very small hole can be drilled, which will be found smooth and accurate, which is a great advantage over the old style in Bench Drilling Machines, by the picking feed, which is put on irregularly, causing breakage of many drill bits, making a rough hole, and also causing unsteadiness in turning fly-wheel.



2222A

Price, complete with Vice ... ... £10 10s. 0d.

2222A Drilling Machine.—Self-feed, double-geared, with fast and slow speed, same design as No. 2222, but a great deal stronger made, to drill holes with ease to $1\frac{1}{2}$in. diameter, with worm feed, $\frac{5}{16}$in. pitch.

Price, complete with Vice ... ... £15 0s. 0d.

Our Vices are fitted with right- and left-hand steel screws, square threads, six per inch; jaws open from and close to centre. When Vice jaws are set to centre of drill bit, any size of circle that Vice will take in can be drilled in the centre. The Vice has slots on side, so that it can be moved on table or bed-plate, and can be supplied with **V** or straight steel jaws.

DIMENSIONS OF MACHINE (No. 2222).

	Inches.
Height	$31\frac{1}{2}$
Diameter of Spindle	1
Traverse of Spindle	3
From Centre of Spindle to Frame	9
Will admit under Drill Bit	$6\frac{3}{4}$
Diameter of Circular Table	$8\frac{3}{4}$
Circular Table will raise...	6
Diameter of Fly-wheel	$16\frac{1}{2}$
Size of Bed-plate	20 by $7\frac{1}{4}$
Pitch of Feed Screw	$\frac{1}{4}$
Drill Bits (made from Round Cast Steel)	$\frac{1}{2}$
In 6 various Sizes up to	$\frac{3}{4}$

Approximate Weight, with Vice complete, 205lb.

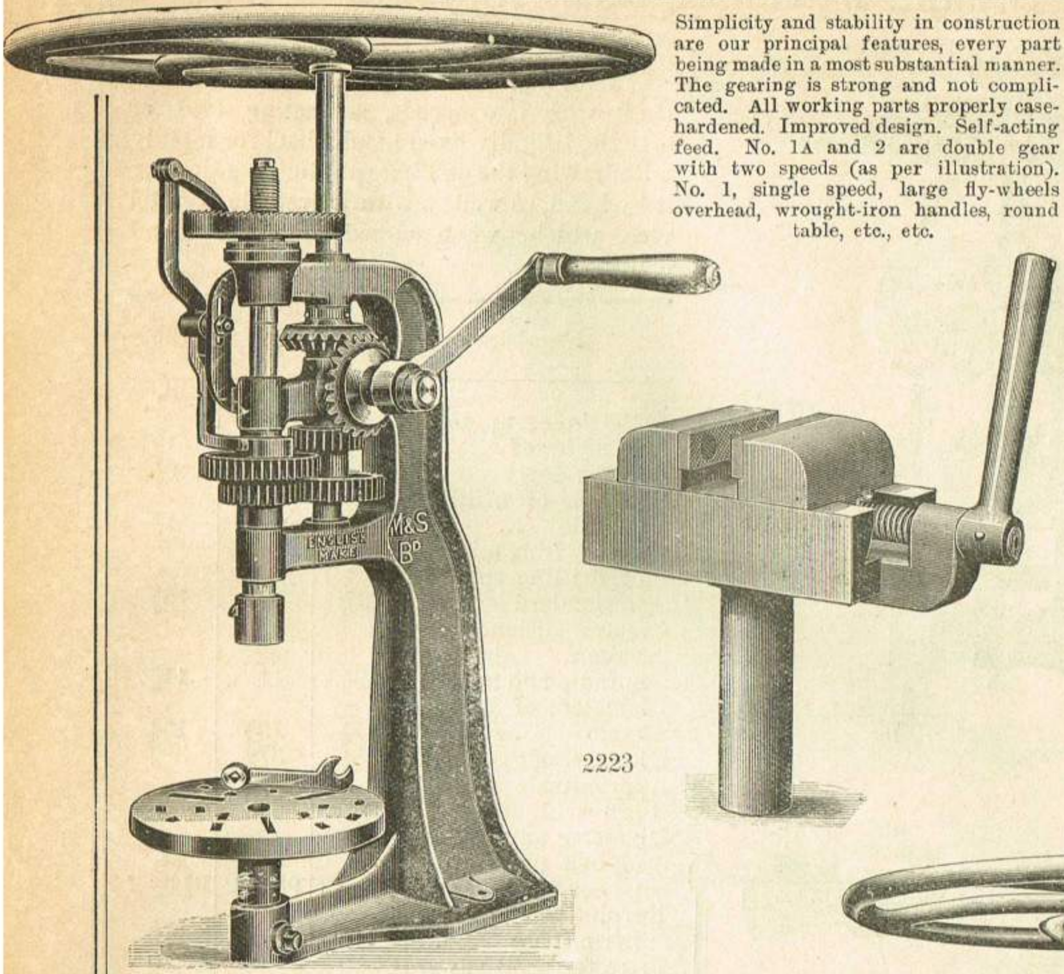
DIMENSIONS OF MACHINE (No. 2222A).

	Inches.
Height	39
Diameter of Spindle	$1\frac{1}{4}$
Traverse of Spindle	$4\frac{3}{4}$
From Centre of Spindle to Frame	9
Will admit under Drill Bit	9
Diameter of Circular Table	$10\frac{1}{2}$
Circular Table will raise...	8
Diameter of Fly-wheel	19
Size of Bed-plate...	$25\frac{1}{2}$ by 11
Pitch of Feed Screw	$\frac{5}{16}$
Drill Bits (made from Round Cast Steel)	$\frac{5}{8}$
In 6 various Sizes up to	1

Approximate Weight, with Vice complete, 370lb.

English-made Drilling Machines.

Simplicity and stability in construction are our principal features, every part being made in a most substantial manner. The gearing is strong and not complicated. All working parts properly case-hardened. Improved design. Self-acting feed. No. 1A and 2 are double gear with two speeds (as per illustration). No. 1, single speed, large fly-wheels overhead, wrought-iron handles, round table, etc., etc.



2223

2223—PRICES AND SPECIFICATIONS.

No.	To Drill Holes.	To admit in Diameter	Height of Drill to Feed Wheel.	Diameter of Fly Wheel.	Approx. Weight.	Price Hand-power.	Extra for Pulleys.	Extra for Vice.
	in.	in.	ft. in.	ft. in.	cwt.	£ s. d.		
1	¾	18	2 - 3	2 - 0	1¼	3 15 0	12/-	26/-
1A	1	18	2 - 3	2 - 3	1½	4 15 0	14/-	26/-
2	1¼	18	3 - 0	2 - 6	2	5 15 0	15/-	26/-

Drills 16/- per doz.

It is necessary that users of Hand Power Drilling Machines should have every point of advantage to meet the varied requirements of their trade. In this machine we think that every advantage will be found. The round table made in the form of a self-centering vice, but which so works loose in the table bracket that it can be drawn to any position; the advantage of this is best known by experience and to users of this class of machine. The fact of the table bracket being made to swing round, leaving all the front of machine clear r drilling large castings, is an item of advantage that fully explains itself, therefore we do not propose to enter into any minute explanation.

Stability in construction is our feature, and every machine will be found well-made, no flimsiness, no complicated gearing. Working parts made of steel hardened, improved design, self-acting feed. No 3 is made single gear. No. 3A, 3B made double gear.

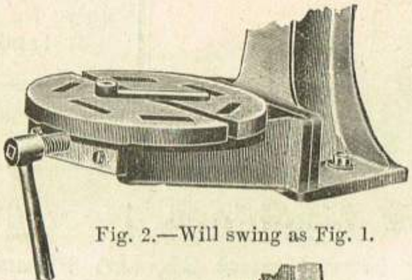


Fig. 2.—Will swing as Fig. 1.

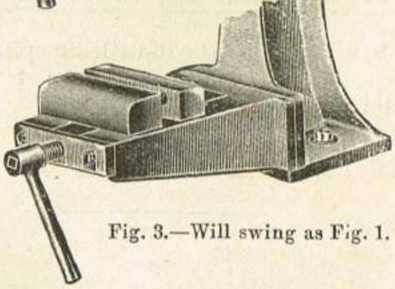
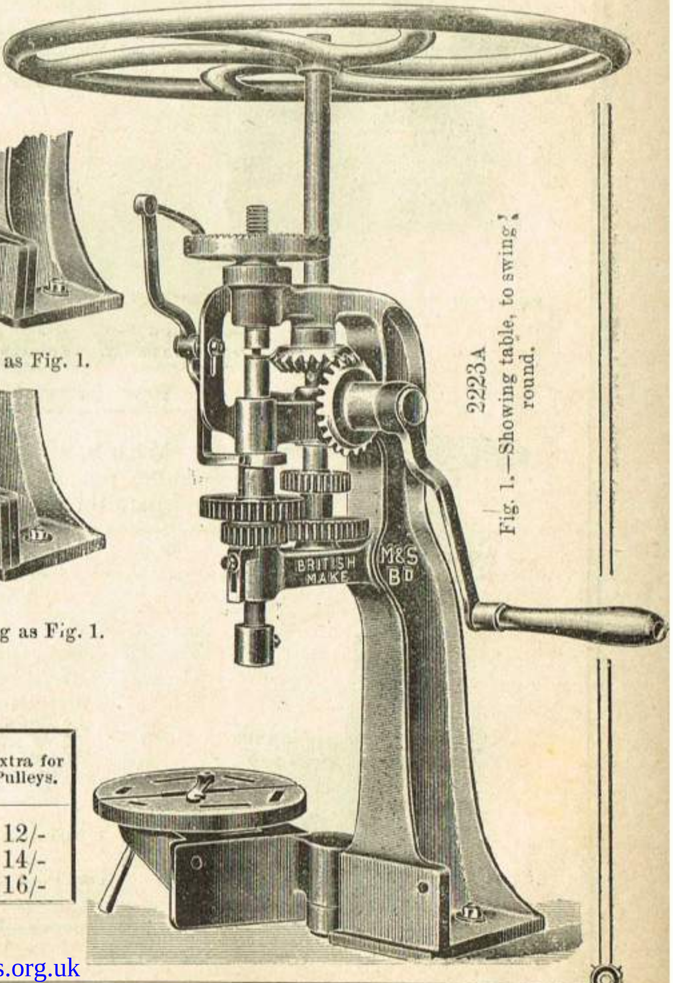


Fig. 3.—Will swing as Fig. 1.



2223A

Fig. 1.—Showing table, to swing round.

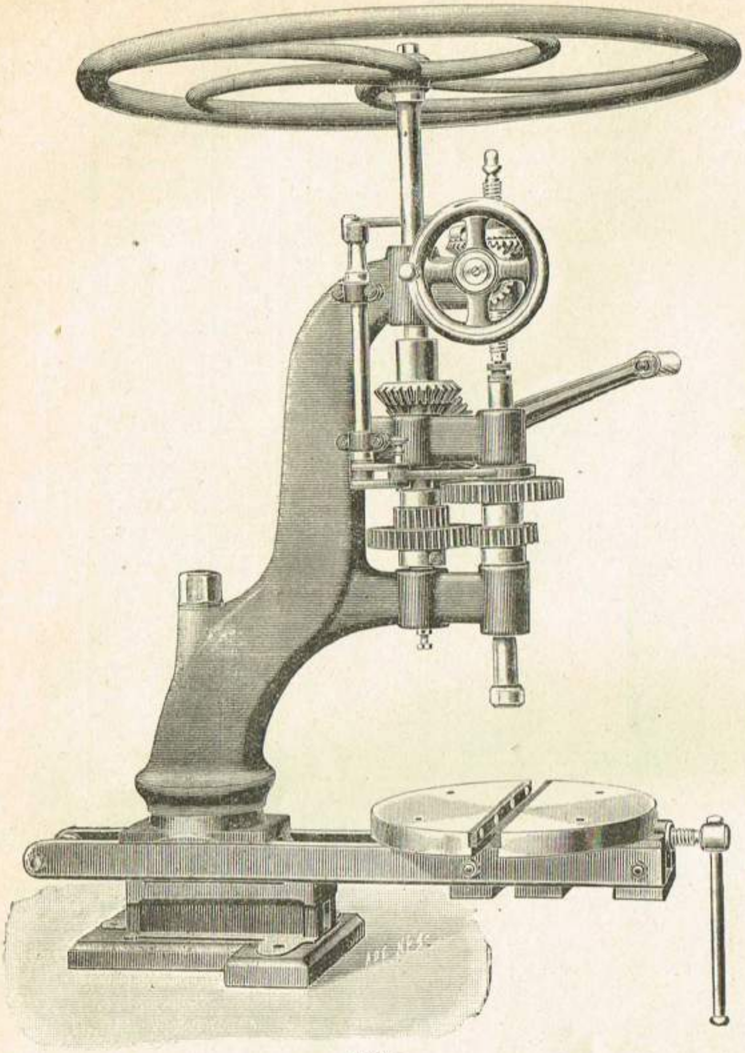
PRICES AND SPECIFICATIONS.

No.	To Drill Holes.	Admit in Diam.	Height of Drill to Feed Wheel.	Diameter of Fly Wheel.	Approx. Weight.	Price of Drill with Table and Vice combined, as Fig. 2.	Price of Drill with Vice only, as Fig. 3.	Extra for Pulleys.
	in.	in.	ft. in.	ft. in.	cwts.	£ s. d.	£ s. d.	
3	¾	18	2 - 3	2 - 0	1½	5 0 0	4 15 0	12/-
3A	1	18	2 - 3	2 - 3	1¾	6 0 0	5 15 0	14/-
3B	1¼	18	3 - 0	2 - 6	2	7 0 0	6 15 0	16/-

Drills, 16/- per doz.

(Nett and Carriage Forward.)

New Standard Drilling Machines, Nos. 17b, 18b and 19b.



2224

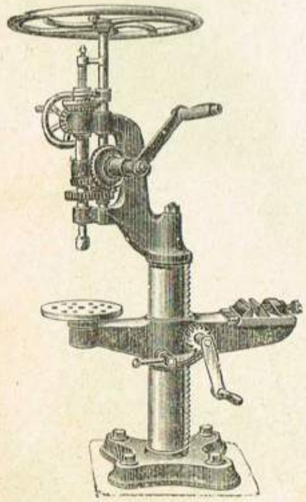
With adjustable step-bearing for vertical shaft with two speeds, self-acting feed of spindle, laterally fixed hand-wheel for rapidly withdrawing the drilling spindle or adjusting it by hand, as well as with adjustable parallel vice, which, when closed, forms a round drilling table.

Number	17b	18b	19b
	in.	in.	in.
Drills holes up to a diameter of ...	$1\frac{3}{8}$	$1\frac{9}{16}$	$1\frac{3}{4}$
Drilling depth ...	$5\frac{1}{2}$	$5\frac{7}{8}$	$6\frac{1}{4}$
Diameter of drilling spindle	$1\frac{3}{16}$	$1\frac{5}{16}$	$1\frac{3}{8}$
Distance from middle of drilling spindle to standard ...	$11\frac{3}{4}$	$14\frac{1}{8}$	$15\frac{3}{4}$
Greatest distance between drilling spindle and table...	$9\frac{7}{8}$	11	$11\frac{3}{4}$
Diameter of round table	$11\frac{3}{4}$	$13\frac{3}{4}$	$15\frac{3}{4}$
Diameter of fly-wheel	$35\frac{1}{2}$	$37\frac{3}{8}$	$39\frac{3}{8}$
Approximate weight of machines ...	396lb.	506lb.	572lb.
Diameter and width of belt pulleys for power machines ...	in. $8\frac{5}{8}$ by 2	in. $9\frac{7}{8}$ by 2	in. $9\frac{3}{8}$ by 2
Revolutions of same per minute ...	110	110	110
Price for hand power	£7 0 0	£8 10 0	£9 10 0
Price for power with fast and loose pulley	7 15 0	9 10 0	10 10 0

Drills for above 16/- per doz.

Pillar Drilling Machines, Nos. 41a and 42a,

For Hand and Steam Power.



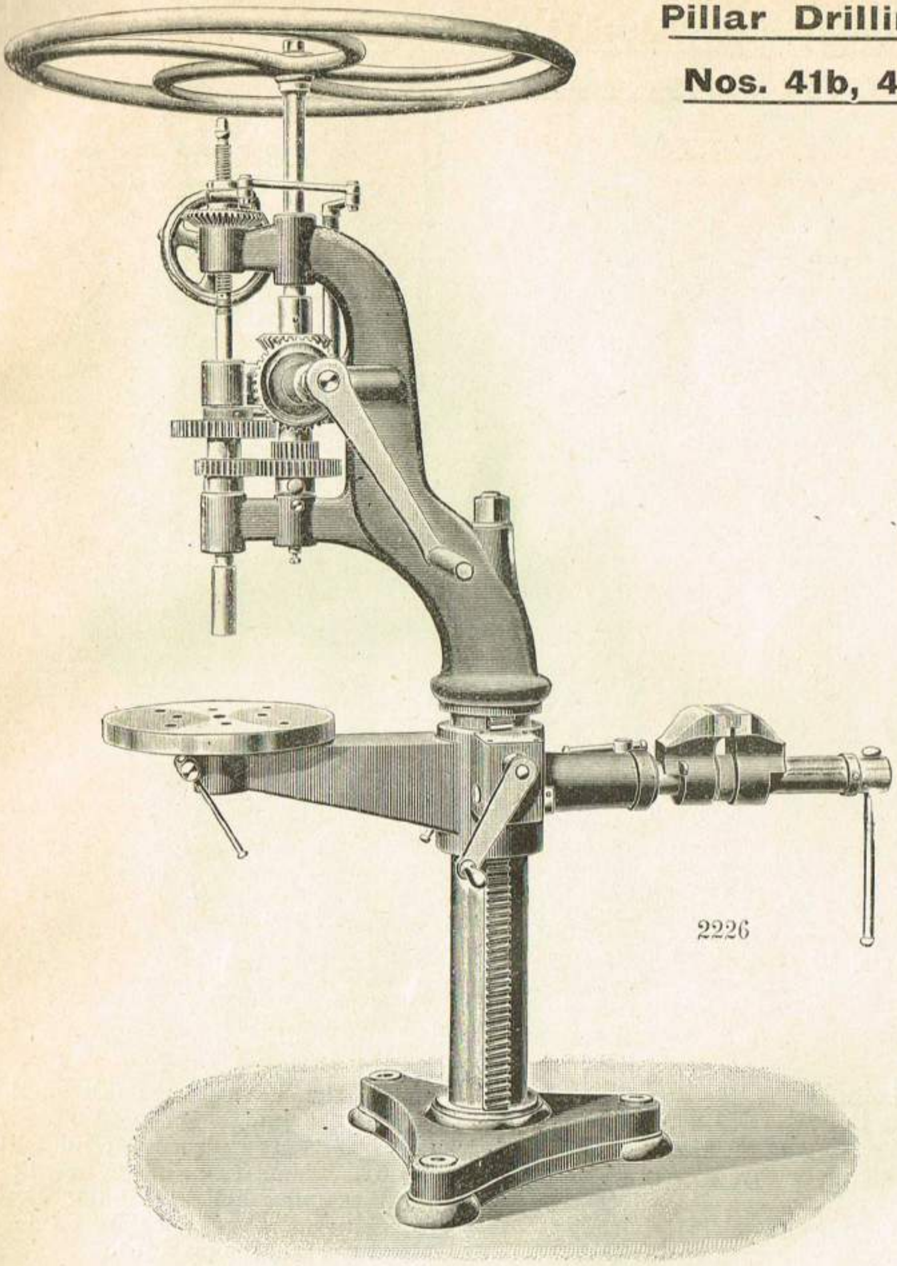
2225

With hand raising gear to drilling spindle and rack and pinion to pillar; double gearing, self-feeding motion; revolving table with circular plate and parallel vice.

Numbers of Machines		41a	42a
To drill holes, diameter		1in.	$1\frac{1}{8}$in.
Diameter of fly-wheel		28in.	32in.
,, admitted under spindle		12in.	13in.
,, of plate		13in.	14in.
,, of drilling spindle		1in.	$1\frac{1}{8}$in.
Height of pillar		31in.	34in.
Weight		$3\frac{1}{2}$cwt.	$4\frac{1}{2}$cwt.
PRICES	For hand, with gear	£8 10 0	£10 0 0
	,, and power	9 10 0	11 0 0
	Set of drills	0 14 0	16 0

Pillar Drilling Machines,

Nos. 41b, 42b, and 43b.



with adjustable step-bearing for the vertical shaft powerfully constructed, with table-arm supplied with drilling plate and parallel-vice, which can be swivelled round the column and be vertically adjusted by rack, worm, and worm wheel, with two easily and conveniently exchangeable speeds, self-action and laterally fixed hand-wheel for rapidly withdrawing the spindle or adjusting it by hand. The machines are delivered for either hand or power, or for both. The spindles are fitted with Morse cones.

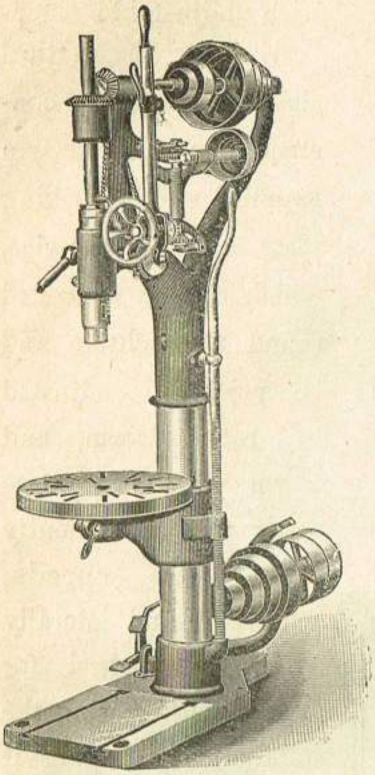
SPECIFICATION AND PRICES.

Number	41 B	42 B	43 B
Drills holes up to a diam. of	$1\frac{3}{8}$in.	$1\frac{9}{16}$in.	$1\frac{3}{4}$in.
Drills holes up to a depth of	$5\frac{1}{2}$in.	$5\frac{7}{8}$in.	$6\frac{1}{4}$in.
Diam. of drilling spindle	$1\frac{3}{16}$in.	$1\frac{5}{16}$in.	$1\frac{3}{8}$in.
Morse cone	No. 3	No. 3	No. 3
Reach, distance from middle of drilling spindle to pillar ...	$11\frac{3}{4}$in.	$14\frac{1}{8}$in.	$15\frac{3}{4}$in.
Greatest distance between drilling spindle and table	$43\frac{5}{8}$in.	$43\frac{5}{8}$in.	$43\frac{5}{8}$in.
Diam. of round drilling plate	$11\frac{3}{4}$in.	$13\frac{3}{4}$in.	$15\frac{3}{4}$in.
Diam. of fly-wheel	$35\frac{1}{2}$in.	$37\frac{3}{8}$in.	$39\frac{5}{8}$in.
Approx. weight of Machines	560lb.	660lb.	792lb.
Diam. and width of fast and loose pulleys	$8\frac{5}{8}$ by 2in.	$9\frac{7}{8}$ by 2in.	$9\frac{7}{8}$ by 2in.
Revols. of same per min.	110	110	110
Diam. and width of belt-pulleys of overhead gear.	$8\frac{5}{8}$ by 2in.	$9\frac{7}{8}$ by 2in.	$9\frac{7}{8}$ by 2in.
Revols of same per min.	110	110	110
Extra weight of the overhead-motion	99lb.	110lb.	110lb.
Running width of steps of step-pulley	$1\frac{5}{8}$in.	2in.	2in.
Price of Machine for Hand Power	**£10 10s.**	**£12 12s.**	**£14 14s.**
Ditto for Hand and Power, with Fast and Loose Pulleys	**£12 12s.**	**£14 14s.**	**£17 0s.**

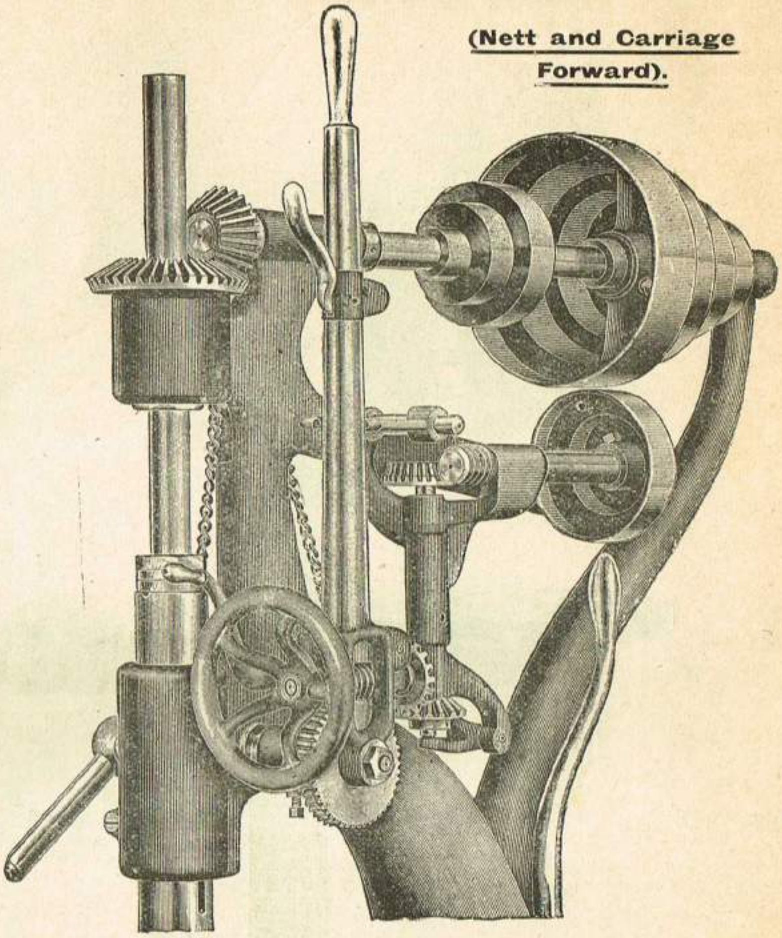
The "Invicta" Upright Drill, No. 1.

20in. Swing.

(Nett and Carriage Forward).



Price £19 10s., usual stock style.



2227

This Drill is now so well known and widely-used that it has become the standard drill of its size on the market. Its construction is thoroughly first-class in every respect, and the best of material is used throughout. The method of raising and lowering the platen is by means of a screw placed parallel with the column, the handle of which is within easy reach of the operator. The platen turns in the arm that supports, and by swinging the arm on the column it can be thrown out from under the drill spindle. Both the platen and its supporting arm can be clamped firmly in place by clamping screws, which have levers attached, thus avoiding the use of wrenches or of any detached tools for adjusting the machine.

The shipper is located where the operator can start or stop the Drill instantly with his foot The spindle is fitted with No. 3 Morse taper and is counterbalanced by a weight in the hollow of the column. The rack pinion and bevel gearing are cut from the solid. The bearings are long and accurately fitted. We can furnish the Drill with plain lever feed, with combination lever and worm feed, or with self feed and automatic stop, as desired.

Each drill has a quick return lever.
Height of drill 67in.
Diameter of column, $5\frac{1}{4}$in.
Diameter of spindle $1\frac{5}{16}$in.
Vertical travel of spindle, 9in.
Diameter of large pulley on cone 9in.
Diameter of small pulley on cone, 4in.

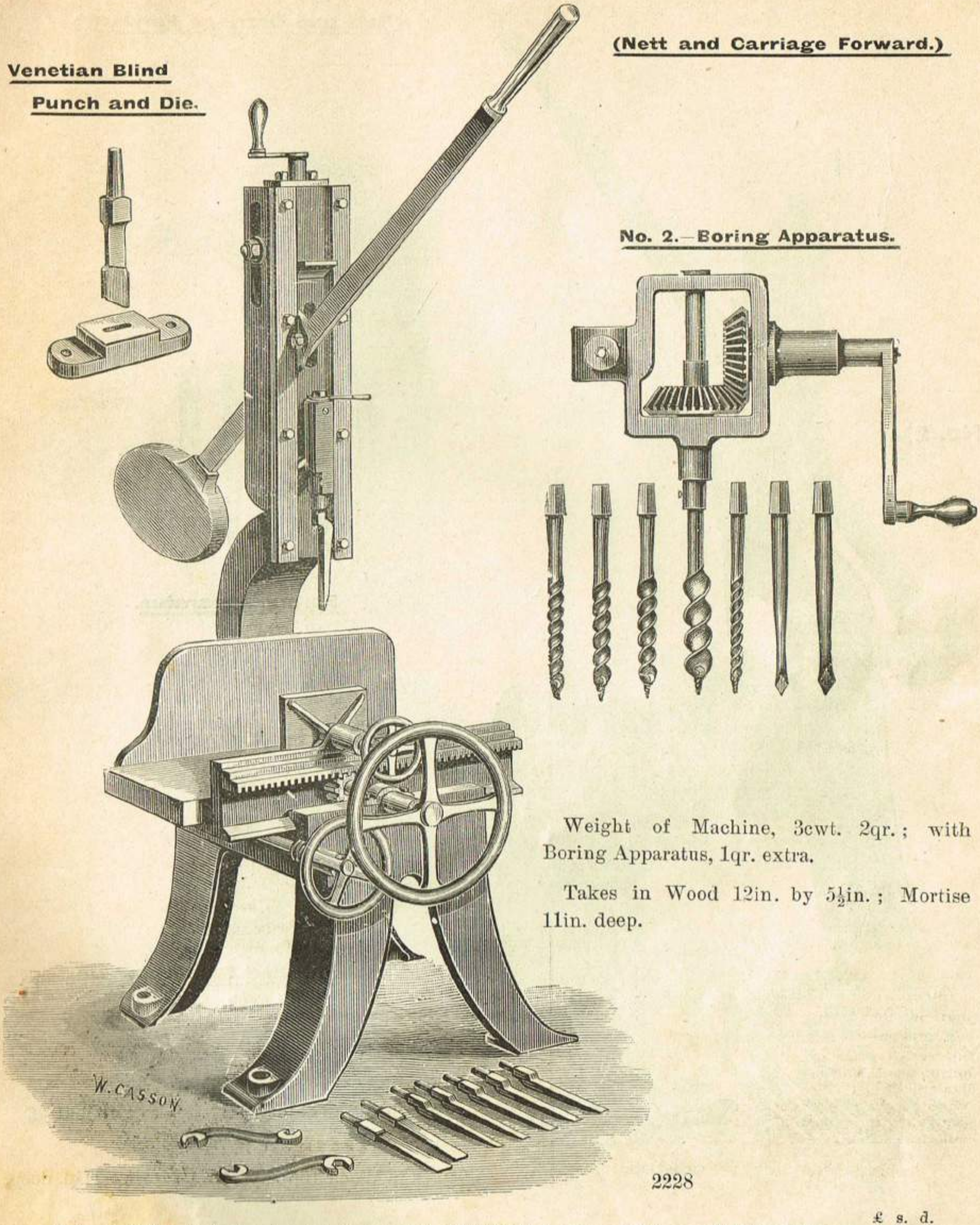
Diameter of tight and loose pulleys, 8in.
Distance from spindle to floor (round base), 43in.
Distance from spindle to floor (square base), 41in.
The cones carry 2in. belt, and have four speeds.
The tight and loose pulleys on the countershaft should be speeded 225 revolutions per minute.
Weight of Drill, 560lb.

PRICES:

	£	s.	d.
Round Base, Lever and Worm Feed	15	15	0
,, ,, ,, Self-Feed and Automatic Stop	18	15	0
Square Base Lever and Worm Feed	16	10	0
,, ,, ,, Self-Feed and Automatic Stop	19	10	0
Extra for Oil Pump	3	15	0
,, for Quarter-turn Countershaft	1	12	6
, for Reversing Friction Countershaft	3	5	0

Patent Centre-motion Mortising and Boring Machine.

(Nett and Carriage Forward.)



Venetian Blind Punch and Die.

No. 2.—Boring Apparatus.

Weight of Machine, 3cwt. 2qr.; with Boring Apparatus, 1qr. extra.

Takes in Wood 12in. by 5½in.; Mortise 11in. deep.

2228

	£	s.	d.	
Price, including 5/16, 3/8, 7/16, 1/2, 5/8, and 3/4, Best Cast Steel Solid Chisels, 2 Core Drifters, and 2 Screw Keys ...	8	10	0	
„ instead of ordinary Chisels and Drifters, but with Self-coring Chisels, sizes as above	9	10	0	
„ with Boring Apparatus, complete with 1/2, 5/8, and 3/4 Augers, 1/4 and 3/8 Cast Steel Drills	1	10	0	extra
„ Venetian Blind Punch and Die	0	10	0	„

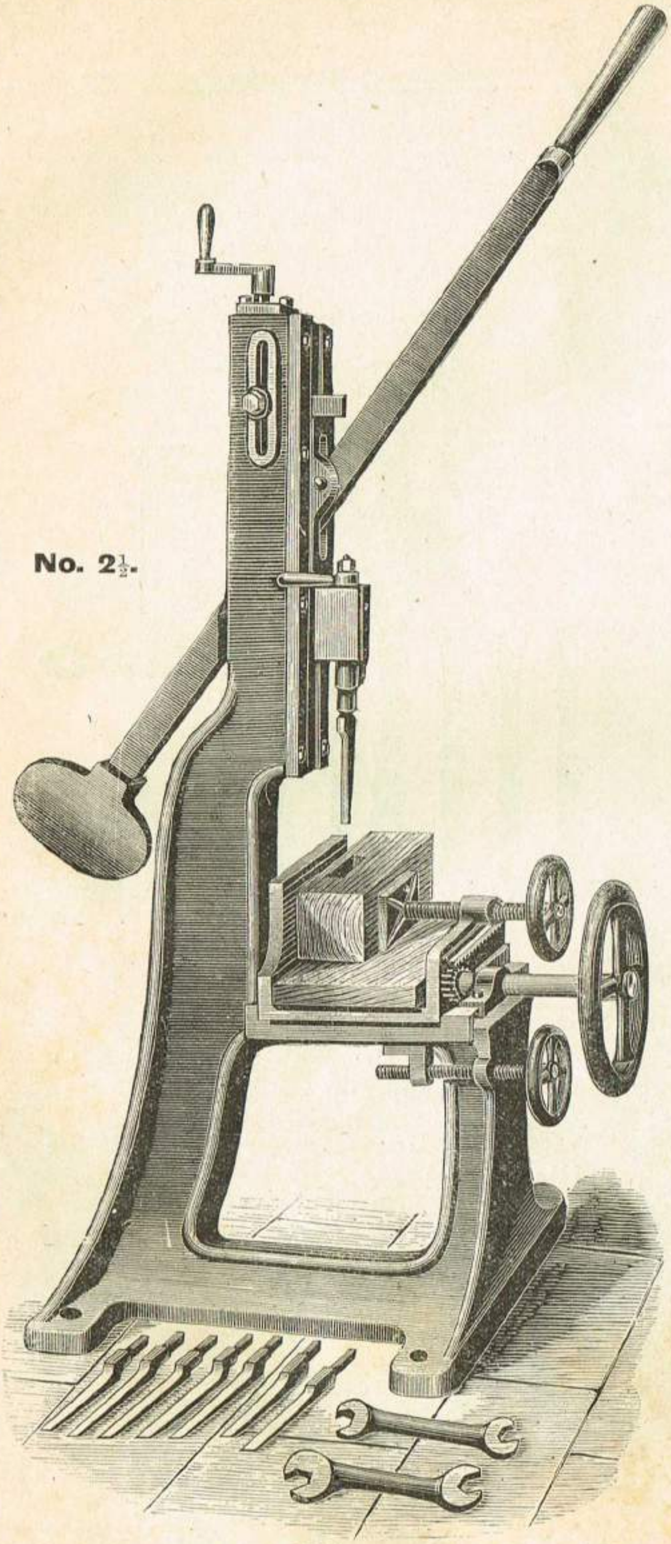
In the above No. 2 Patent Centre Motion and Direct Action Mortising Machine, the Lever (wrought iron) is directly over the Chisel, so that a large additional Power is obtained, and the wear and tear consequent upon the usual Side Crank Pinion Wheels and Toggle movement is entirely done away with.

We have every confidence in recommending it as the simplest, cheapest, and best Mortising Machine made.

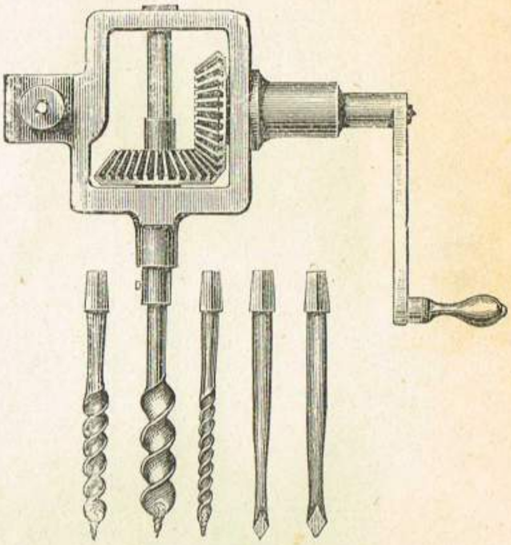
For shipment, the above-named Machine can readily be taken apart, as the upright and standard are separate, so that when packed for shipment it occupies very little space.

Patent Centre-motion Mortising and Boring Machine.

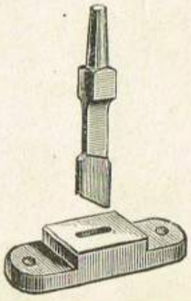
(Nett and Carriage Forward.)



No. 2½.



Boring Apparatus.



Venetian Blind Punch and Die.

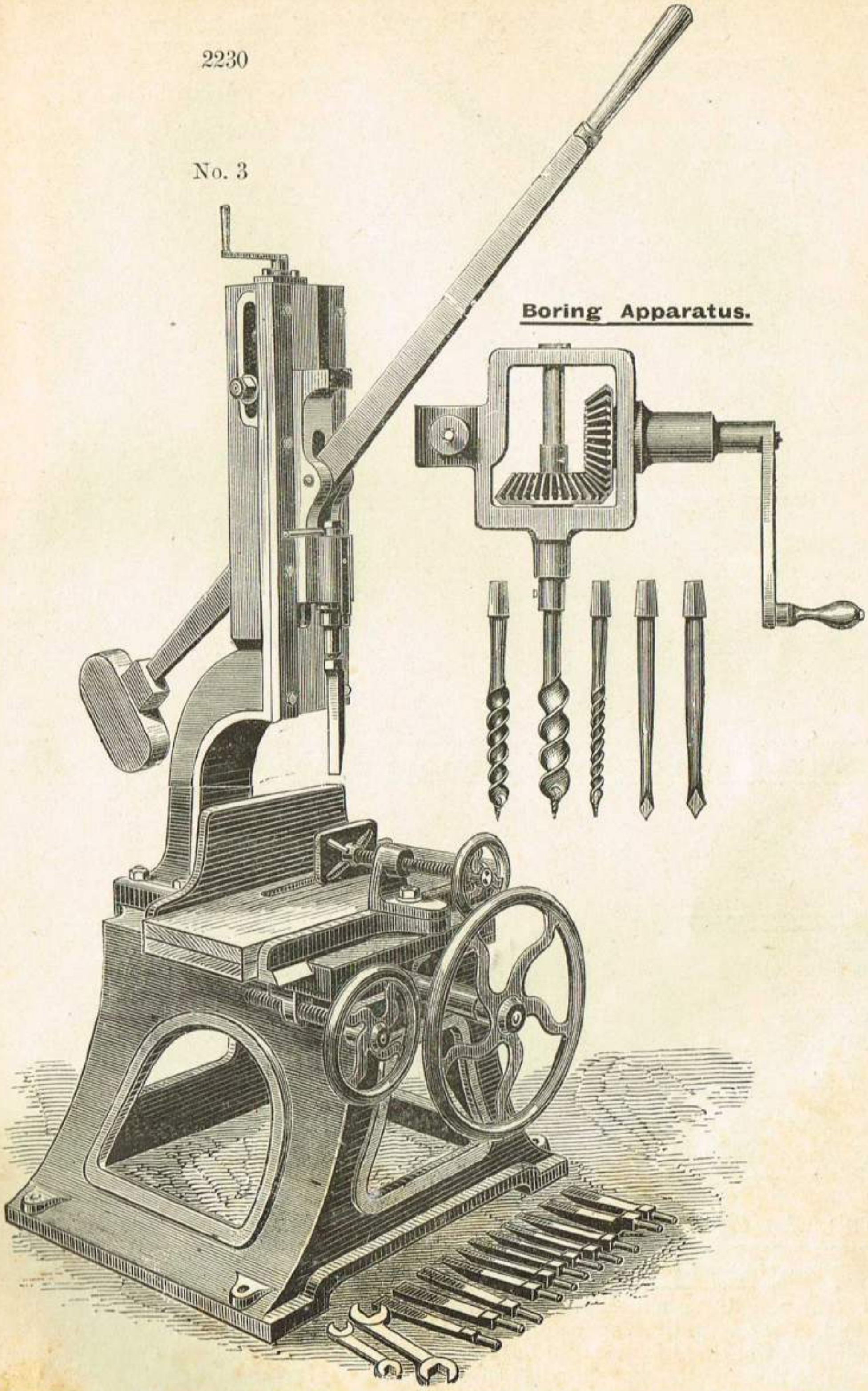
Weight of Machine, 3cwt. 3qr.; with Boring Apparatus, 1qr. extra.

Takes in Wood 12in. by 7½in.; Mortise 11in. deep.

2229 Prices.	£	s.	d.
Including $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$in. Best Cast Steel Chisels, 2 Core Drifters, and 2 Screw Keys ...	9	10	0
Instead of Ordinary Chisels, but with Self-coring Chisels, sizes as above	10	10	0
With Boring Apparatus, complete with $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$in. Augers, $\frac{1}{4}$ and $\frac{3}{8}$in. Cast Steel Drills, extra	1	10	0
Venetian Blind Punch and Die	0	10	0

In our No. 2½ Patent Centre-motion Mortising Machine the Stand and the Upright Frame are all cast in one piece, giving great solidity and firmness, which is required in all Mortice Machines. If required for shipment we can supply the Machines in sections, like our No. 2, so as to be readily taken apart, so that when packed for shipment it occupies very little space.

Patent Centre-motion Mortising and Boring Machine.


2230

No. 3

Boring Apparatus.

Weight of Machine, 5 cwt. 1 qr.; with Boring Apparatus, 1 qr. extra.
Will take in Wood 12in. by 10in. and Mortise 12in. deep.
Nett and Carriage Forward.

For Shipment, this Machine can readily be taken apart, as the upright and standard are separate, so that when packed for Shipment it occupies very little space.

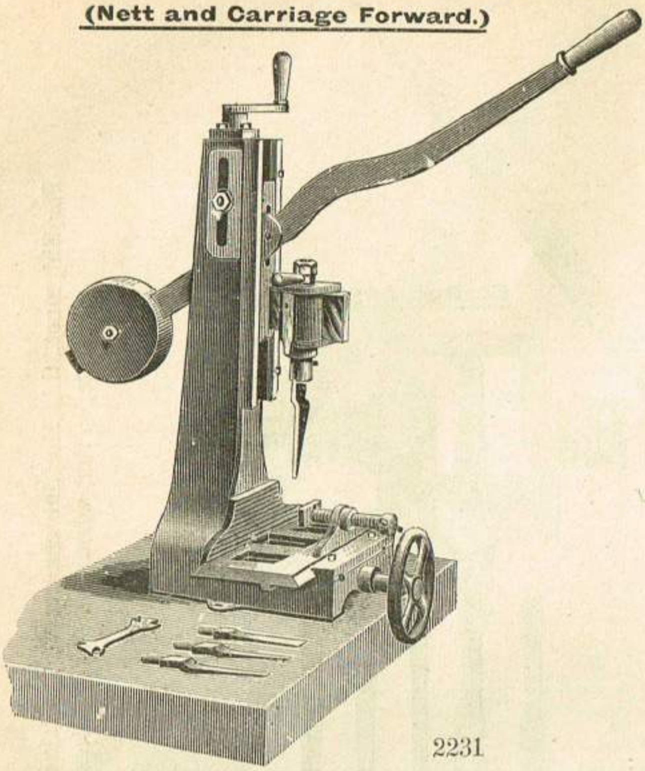
Our No. 3 Patent Centre Motion and Direct Action Mortising Machine is the Strongest Hand Power Mortise Machine offered to the Trade, and is an easily worked Machine, the Lever (wrought iron) is directly over the Chisel, so that a large additional Power is obtained, and the wear and tear consequent upon the usual Side Crank Pinion Wheels and Toggle movement is entirely done away with.

We either put a Hand Wheel, as shown in illustration, or the Vice, Screw, and Handle for Tightening up the Wood.

	£	s.	d.
Price, including $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{4}$, and $1\frac{1}{2}$in. Best Cast Steel Solid Chisels, 3 Core Drifters and 2 Screw Keys	14	10	0
" instead of ordinary Chisels and Drifters, but with Self-coring Chisels, same sizes as above	17	0	0
" with Boring Apparatus, complete with $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, and 1in. Screw Augers, $\frac{1}{4}$ and $\frac{5}{8}$in. Cast Steel Drills ... ... extra	1	15	0

The Cabinet Makers' Patent Centre-motion and Direct Action Mortising Machine.

(Nett and Carriage Forward.)

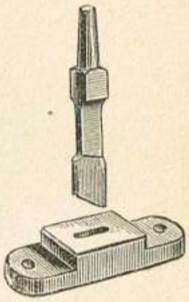


2231

Weight, 1cwt. 2qr.

Specially Adapted for Cabinet Makers' Use. Venetian Blind Punch and Die.

Will take in Wood 3 by 3, and Mortise 6in. deep.

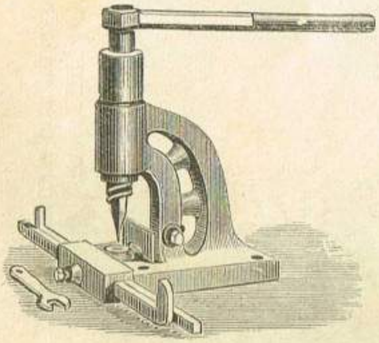


PRICE, including $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ Best Cast Steel ordinary Solid Mortice Chisels, 1 Core Drifter, 1 Screw Key, £6 6s.

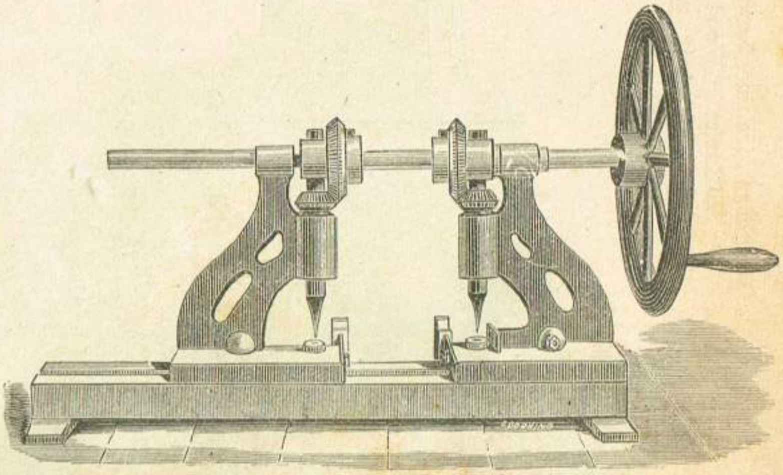
PRICE, if fitted with $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ Self-coring Chisels, instead of ordinary Chisels, £7.

With Venetian Blind Punch and Die, extra 10/-

Improved Single and Double Slate-holing Machines.



2232 THE "PRINCE," £1 5s.



2232A THE "VICTOR," £5 10s.

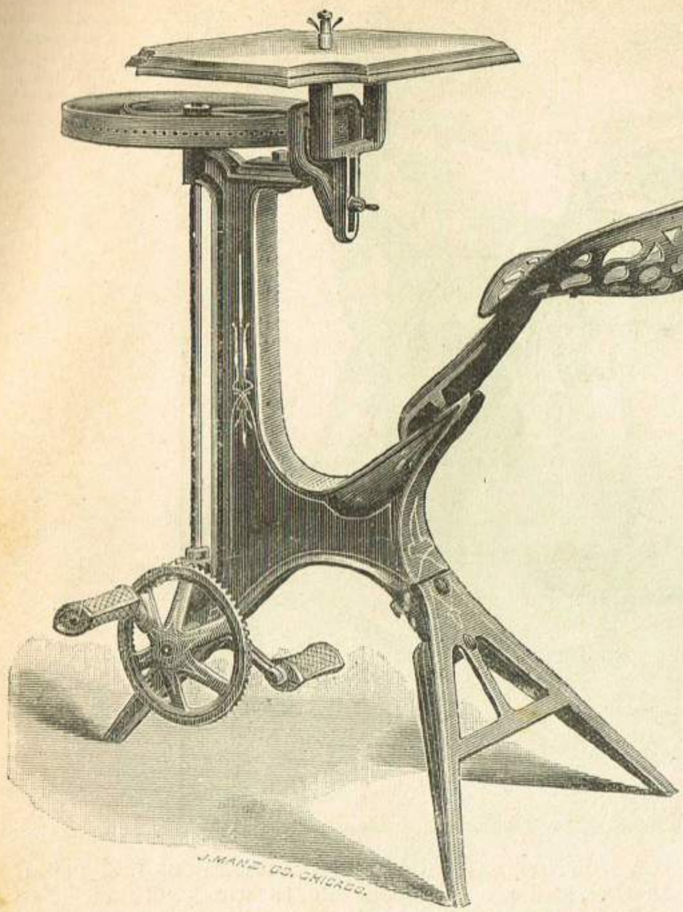
The "Rapid" Lever Motion Double Slate-holing Machine.

2232B The "Rapid" is a most perfect, and as the name implies, a rapid holer; the motion is most powerful, and, at the same time, very quick and effective in its action. The lever puts in operation a pair of eccentrics, working in gun-metal bushes, which immediately presses down the bar carrying the two punches; to these, at the same time, is given a quick revolving motion by a pair of bevel wheels, which causes the punches to thoroughly drill the holes, thereby doing away with all breakage or splintering of slates. It is arranged to hold any width of Slate up to 14in. wide, and to gauge and hole any length from bottom edge of Slate. Complete with Punches, Guides, and Screw Keys. Price £6.

We wish to call the attention of Slate Merchants and Slaters to our Improved Single and Double Slate-Holing Machines. The Single Machines, with a sharp boy, will be able to hole from 300 to 400 Slates per hour; it is fitted with necessary Screw Key and Gauges.

The Improved Double Slate-holing Machines are the simplest, most rapid, and least liable to get out of order of any other Machine made, and will hole Slates as fast as any man or boy can put under it, with the least breakages. Complete with Gauges, Screw Keys, and two extra Punches.

Barnes' Foot-Power Former, No. 2.


J. MANZ & CO. CHICAGO.

2233

This illustration represents a Machine for moulding edges of brackets, scroll work, panel work, regular and irregular mouldings of all styles up to $\frac{7}{8}$in. The speed of the knives is from twenty to twenty-five hundred per minute. By the aid of our

PATENT VELOCIPEDE FOOT-POWER

the knives are, at the will of the operator, caused to rotate in either direction that the grain of the wood may require, thus avoiding all complicated devices for reversing motion usually employed on single-spindle formers. The great speed of the knives ensures rapid and smooth work. Articles that look very plain can be made costly and elegant in appearance by the rapid and perfect work of this Machine.

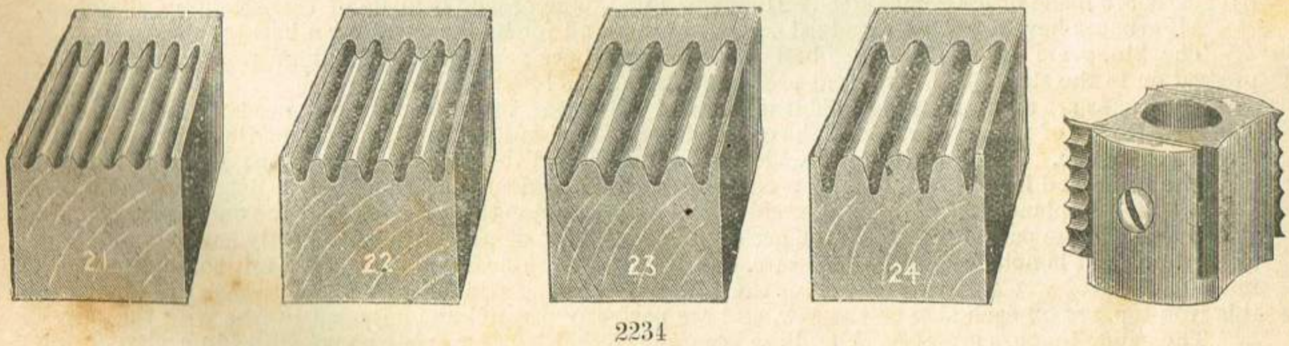
The spindle and its bearings are of cast-steel, with adjustments to take up the wear. The parts to set the Machine for the use of different knives and work are convenient, and all substantial and durable. The table can be lowered to give $2\frac{1}{4}$in. between it and the lower cutting edge of the knife.

The Machine, complete, weighs 80lb.

PRICES.

Former ...	£4	10	0
Cutters, extra, each	0	4	0

Beading Knives.



2234

Views showing bead work; also special head for Bead Knives. This head will not cut with reverse motion. One head will serve for all sizes of Bead Knives.

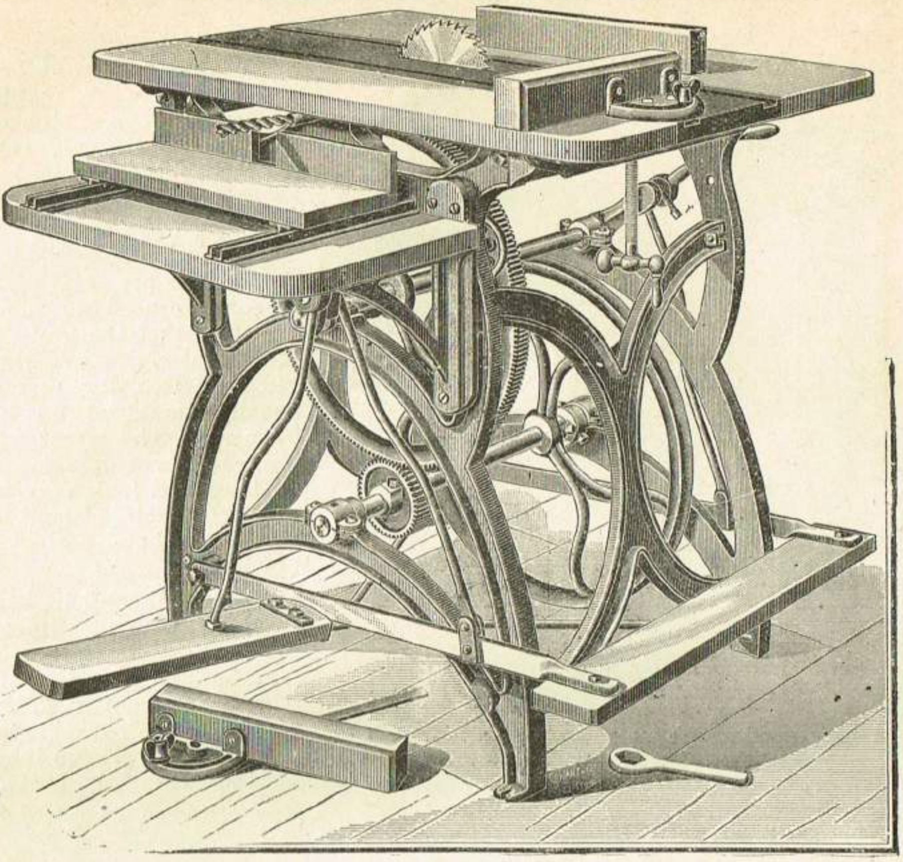
PRICES.

Head		6/9
Beading Knives	per pair	4/-
Twenty-four various pattern Moulding Cutters	each	4/-

Special sheets descriptive of these will be furnished on application.

Marston's Patent Circular Saws.

For Hand and Foot Power.



2235

These Machines, now made with our improved iron top and with boring attachment and patent groovers, are the most desirable of any in the market, and are indispensable to wood-workers. The working parts consist of two shafts and the saw arbour. The centre shaft receives the power from the operator either by treadle or crank, and is applied direct by means of a 20in. cut gear on that shaft, which meshes into a 2in. gun-metal gear on the saw arbour; and also with a 4$\frac{3}{4}$in. gear on the lower shaft, which also carries a turned balance wheel, 23in. in diameter and weighing 70lb. By this means the balance wheel is given a speed 4$\frac{1}{2}$ times greater than the crank or driving shaft, giving it sufficient momentum and power to carry the saw steadily through the work. At the same time the 20in. gear, meshing into the 2in. gear on the saw arbour, gives the saw a speed 10 times greater than the driving shaft. All gears are machine-cut. All shafts are made of Bessemer steel. Diameter 1$\frac{1}{8}$in. The arbour is made of cast steel, $\frac{7}{8}$in. diameter.

All arbours have a $\frac{3}{8}$in. hole and set screw in outer end for holding bits for a boring table.

The 2in. gears are made of the best gun-metal, and are very durable. All gears and wheels are pressed on to the shafts by a powerful press, and are also held by set screws.

The boxes are all of genuine Babbit metal, and will wear for years without needing re-babbiting. The treadles are of wrought iron, and the cranks have extension handles that can be adjusted to different lengths of stroke. The table is 28in. wide by 37in. long, and the entire height of the Machine is 36in.

The improved iron top consists of a centre-piece 10in. wide running the whole length of the table, and is bolted to planed cleats on under side; and as it contains the grooves that the cutting-off gauges slide in, and is the part subjected to the greatest wear, it must of necessity be perfectly accurate and true at all times. It is not affected by moisture, and will not warp or twist, the great fault common to tops made entirely of wood. The grooves for the 2 cutting-off gauges mentioned above, which are planed in this iron top, are on each side of the saw, and are perfectly parallel and adjusted in line with the saw.

The gauge tongues are of steel, and are accurately fitted. The ripping gauge slides in a planed iron groove on the right of the saw. The balance of the table, on each side of the iron top, is made of hard wood trued off level with the same. The table is hinged at the back and can be raised by means of a hand-wheel for grooving, rabbeting, etc.

PRICES.

No. 1 With 2 7in. Saws, 1 Cross Cut and 1 Rip, filed and set; 2 Cutting-off Gauges, 1 Ripping Gauge, 2 Crank Handles, and 1 Wrench; Weight 330lb. (Balance Wheel 40lb.)	£13 10 0
No. 2 Ditto ditto (Balance Wheel 70lb.)	14 12 6
Boring Table (for either of above) ...	£1 11 6 extra.

MACHINE BITS, 5in long, $\frac{3}{8}$in. Shank.														
	Sizes	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	1in.
	PRICES	2/-	2/4	2/8	3/-	3/6	4/-	4/6	5/-	5/6	6/-	6/-	6/6	7/- each.

The Patent Hand and Steam Power Central Rack Rising Top Saw Bench. (Nett and Carriage Forward.)

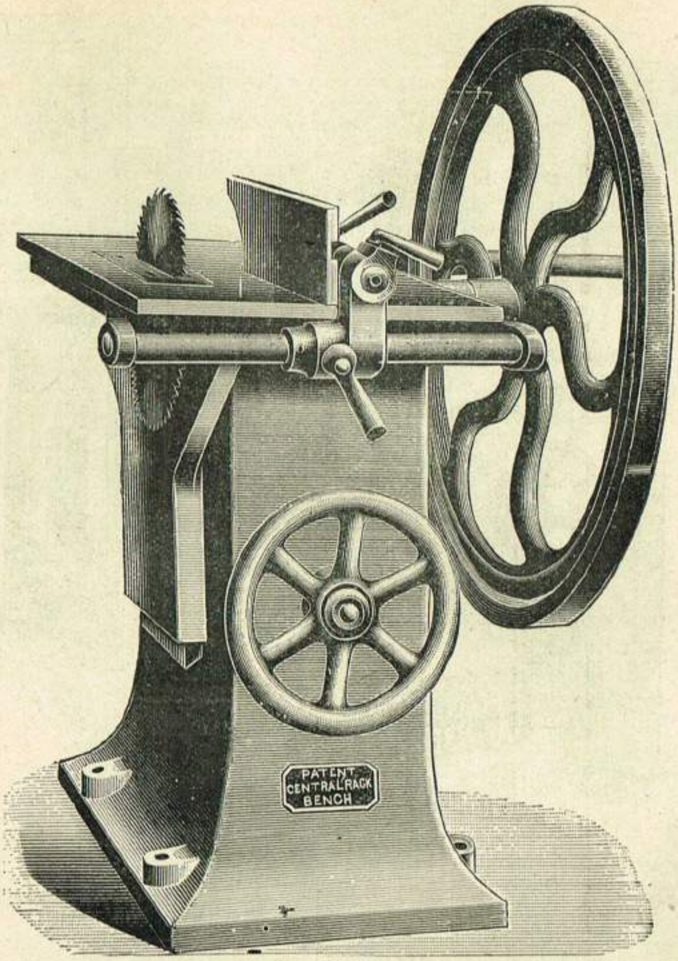
For

Tenoning,

Grooving,

Jointing.

This Bench is a handy tool, and will take a 15in. Circular Saw, and cut 5in. deep



2236

For

Rabbeting,

Cross

Cutting, etc.

The Fence is adjustable every way, and swings clear over for Cross-Cutting.

The Bench is fitted with Lever Strap Guide, and Saw Spindles are made with adjustable Lock Nuts to take up all side play in the neck nearest Saw. The Bearings are made of Gun-metal. We can recommend this Bench to users as a substantial, useful, and cheap tool.

Saws Extra—15in. Circular Saws to suit above Bench 10/6 each.

No.	Dimensions of Table.	Takes in Saw.	Depth it will cut.	Pulleys.	H. P. Required	Revolutions of Saw.	Weight Approx.	Price with Steam Pulleys or Fly Wheel.	Price with Steam Pulleys & Fly Wheel.
								£ s. d.	£ s. d.
1	2ft. 6in. by 1ft. 6in.	15in.	5in.	5 by 2in	1	1,500	6cwt.	11 10 0	12 10 0

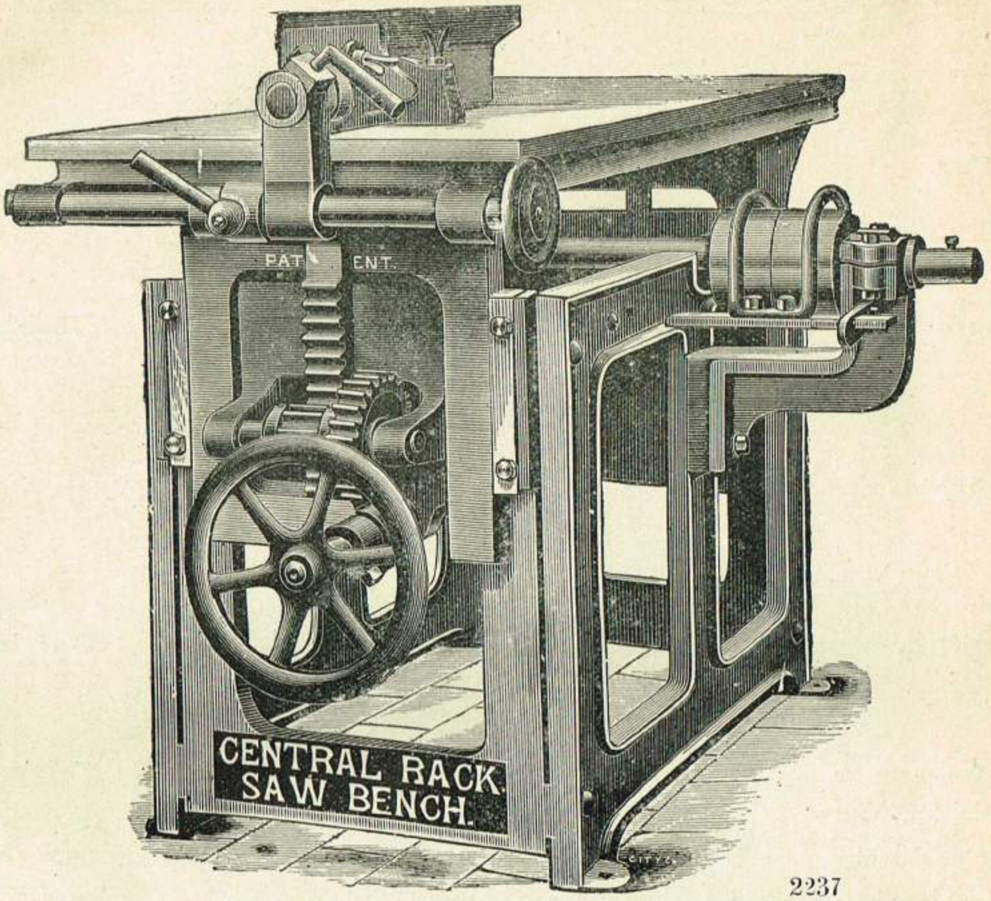
Warranty.—Every Tool mentioned in this List (Oilstones, Grindstones, and Tools of Foreign manufacture excepted) is Warrranted to be of the Best Material, Workmanship, and Finish, and any faulty article will be exchanged if returned within one month from date of purchase.

Caution.—Whereas many Ironmongers are in the habit of offering to supply Tools at "NURSE & Co.'s" prices, but supplying articles that never came from us, we would particularly request that all orders be sent to us *direct*, when they will receive our most careful and prompt attention, and customers can rely upon receiving goods of the highest possible quality only.

Patent Central-rack Rising-top Saw Bench.

(Nett and Carriage Forward.)

Three Prize Medals Awarded.



2237

Three Prize Medals Awarded.

No.	Dimensions of Table.	Takes in Saw.	Depth it will cut.	Pullies.	H P. required.	Rev. of Saw.	Weight Approx.	Prices.		Remarks.
	ft. in. ft. in.	in.	in.	in. in.			cwt.	£	s.	
2	3 4 by 1 8	20	7	6 by 2½	1½	1400	7	13	10	Heavy Pattern.
3	4 0 ,, 2 0	26	10	8 ,, 3½	2	1200	9½	16	10	,, ,,
4	4 9 ,, 2 4	30	12	8 ,, 4	2½	1000	13	22	10	,, ,,
5	5 7 ,, 2 10	36	14	9 ,, 4	3	900	18	29	10	,, ,,
6	4 2 ,, 2 2	30	12	8 ,, 4	2½	1000	11	18	10	Light ,,
7	5 0 ,, 2 6	36	14	9 ,, 4	3	900	14	24	10	,, ,,

SAWS EXTRA.

Saws for above Benches extra, 20in. 16/6, 26in. 25/6, 30in. 34/6, 36in. 54/- each.

This Bench is recommended to users as the most modern, substantial, and best-finished Circular Saw Bench in the market, having fewer parts than any other rising-top bench.

The table can be raised and lowered whilst the saw is running, and does away with the objectionable and dangerous packing pieces so much in use in fast-top benches; in fact, it is the sawyers' friend, and it will be found extremely useful for boring, tenoning, grooving, jointing, rabbeting, and cross-cutting to any length, and occasional moulding can be done with the addition of cutter block.

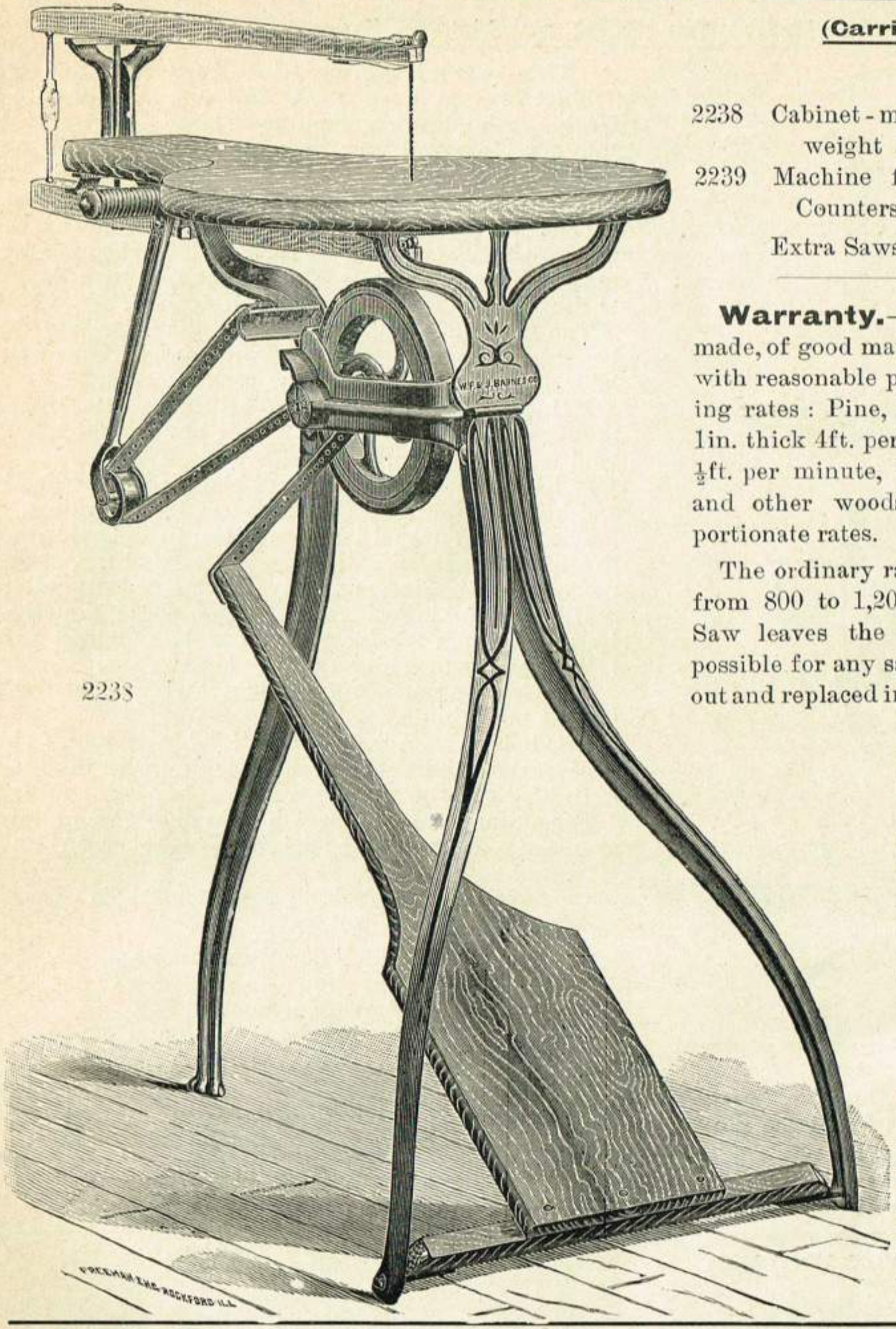
The fence is adjustable every way, and swings clear over end for cross-cutting, and fitted with fine thread screw adjustment and wheel on left-hand side of bench.

Every machine is fitted with improved lever strap guide, and saw spindles are made with adjustable lock nuts to take up all side play in the neck nearest saw.

The 20in., 26in. and light 30in. Benches have two long gun-metal bearings; the 30in., 36in., 42in. and 48in. have three bearings, and are made with stationary tops and drag feed motion when required.

Rising-top Saw Benches are fast superseding those with the rising spindle, as they take up less space, can be fixed in any position without countershaft, and the driving belt being always at one tension consequently more work is got out than with the constantly varying belt of the rising spindle type.

Barnes' Patent Foot-power Scroll Saw, No. 7, Improved.



2238

(Carriage Forward).

	Prices.	£ s. d.
2238	Cabinet-makers' Machine, weight 56lb.	3 10 0
2239	Machine for Power, with Countershaft	4 10 0
	Extra Saws, per dozen ...	2 6

Warranty.—We warrant it to be well made, of good material and workmanship, and with reasonable practice to saw at the following rates: Pine, 3in. thick 1ft. per minute, 1in. thick 4ft. per minute; Walnut 3in. thick ½ft. per minute, 1in. thick 2ft. per minute; and other woods and thicknesses at proportionate rates.

The ordinary rate of speed when sawing is from 800 to 1,200 strokes per minute. The Saw leaves the work as smooth as it is possible for any saw to do, and can be taken out and replaced in an instant for inside work.

The swing around the blade, under the arm, is 24in.

The length of the blade is 7in.

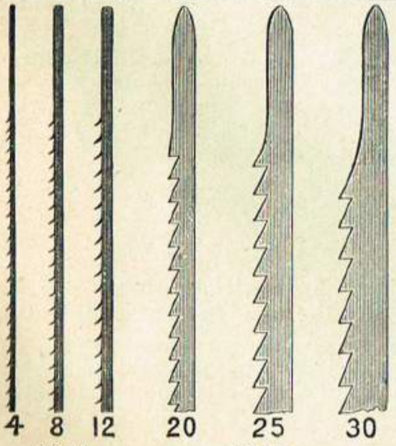
The table and arms are made of hard maple.

The frame is of cast iron, strong, yet light.

The balance-wheel runs on a steel arbour.

We include one dozen blades with each machine.

This machine is designed for practical service in the workshops of carpenters and builders, cabinet-makers, and other wood-workers.



2239 2240

The "Victor" Saw Blades.

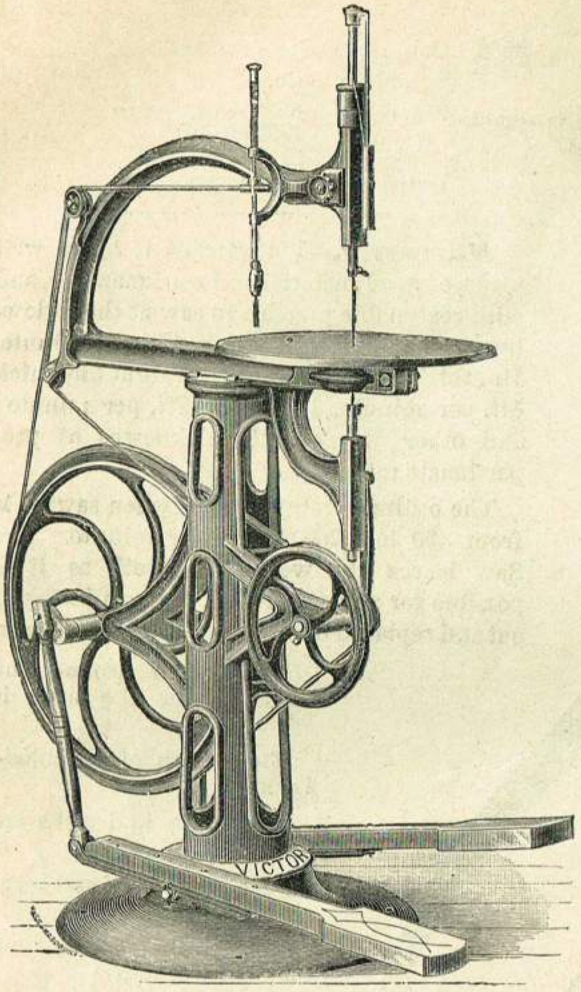
8in. long. For "Victor" Machines.

These Saw Blades are of a superior quality, temper, and finish. Nos. 4, 8, and 12 are tempered suitable for cutting in wood, bone shell, and soft metals, and Nos. 20, 25, and 30 for cutting in woods; the latter have relieved backs, "set" teeth, and can be filed.

	Prices.	
2239	Nos. 4, 8, and 12	1/- per doz.
2240	Nos. 20, 25, and 30	3/- „

The "Victor" Scroll Saw. (Carriage Forward.)

(Patented.) For Foot or Steam Power.



2241

This Machine is designed for Pattern, Model, and Cabinet Makers, Carpenters, Builders, and all Wood Workers who desire a Machine of large capacity, suitable for close and very accurate work. It will cut with the greatest precision up to 3in. thick, and has 24in. swing.

It has an adjustable tension in connection with the upper spindle, and may be varied to suit the operator, using regularly 8in. saw blades, but can be adjusted to use 5in. blades for fine work, if desired.

The Iron tilting table is 18in. in diameter, and can be changed to any angle for sawing inlaid work ; the table and all finished parts are nickel-plated.

It has an adjustable upright drilling attachment, provided with an "Empire" drill chuck, which will hold from 0 to $\frac{3}{16}$in. twist drills.

It has a large dust blower, which works perfectly and keeps the lines of the work free from sawdust.

The driving wheel is heavy, 24in. in diameter, and the driving belt being the patent $\frac{1}{2}$in. **V**-shape, strong power is obtained without any slipping or lost motion.

It has a double foot treadle, with a walking motion, by which much greater power can be obtained with less fatigue than with any other kind in use.

The average rate of speed when sawing is about 800 strokes per minute.

The height from floor to top of table is 40in. ; this enables the operator to run the Machine with both feet sitting, or one foot standing.

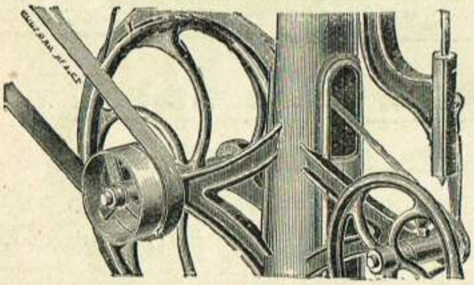
For steam power we furnish tight and loose pulleys, arranged to connect to the driving wheel shaft on either side.

Weight of Machine, complete, 240lb.

PRICES.

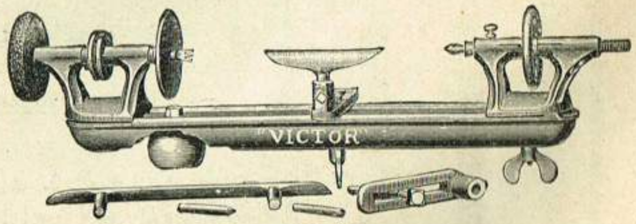
			£	s.	d.
2241	No. 1.	"Victor" Scroll Saw, complete as shown in cut, with one dozen 8in. assorted Saw Blades, Twist Drills, and Wrench	£8	8	0
2242	No. 2.	The same as No. 1. without Drilling Attachment	7	7	0
		Tight and Loose Pulleys, for Steam Power, to attach to Nos. 1 or 2 Machines, extra ...	1	1	0
2243	No. 4.	For Steam Power only, arranged to fasten to a Work Bench with Fast and Loose Pulleys on the Balance Wheel, and a Support for them from the floor ; it has no Drilling Attachment	5	5	0

Steam Power Attachment.



2243

The "Victor" Lathe.



2244

The "Victor" Lathe attachment is thoroughly practical, strong, and well finished, has planed ways, etc. It can be easily attached to either the "Victor" or "Empire" Machines in the same manner as the table.

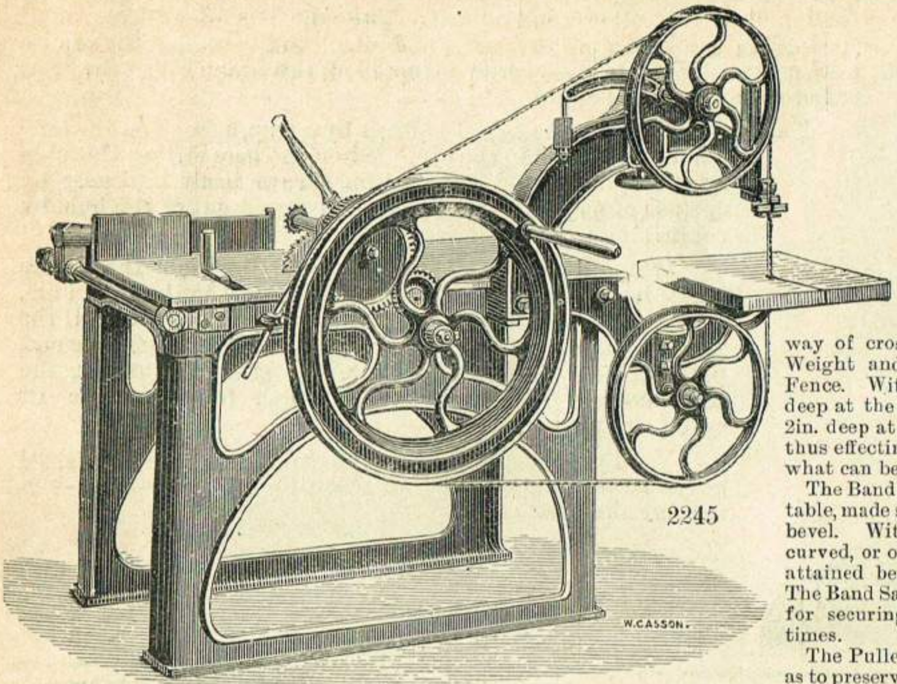
Length of bed, 26in. Distance between centres, 15in. Swings 6in.

The head has a "hollow" steel spindle, nicely fitted with face plate, spur centre, cup centre, and two point centres. On the outside is fitted a 4in. solid emery wheel, for grinding and polishing tools, metals, &c. The tail-stock has a steel screw spindle, with hand wheel, etc.

2244 PRICE. "Victor" Lathe £2 5 0

The Patent Hand-power Combined Circular and Band Sawing Machine.

(Nett and Carriage Forward.)



2245

Will cut with 14in. Circular Saw, 4½in. deep; with Band Saw, 6in. deep; and weighs 9cwt.

For the use of Joiners, Builders, Cabinet-makers, Coach-builders, etc. It is also very useful for Contractors, as it is readily removed from place to place where required.

The table for above Bench is 4ft. by 2ft., substantially made of iron, planed true on the top. It is fitted with rising and falling Spindle, self-acting Feed Motion, Parallel Fence, made to cant, so as to cut bevels, and also to turn over end of Bench, to be out of the way of cross-cutting. It is also fitted with Weight and Roller for keeping timber to Fence. With this Bench one man can cut 3in. deep at the rate of 10ft. in four minutes, or 2in. deep at the rate of 10ft. in two minutes, thus effecting a saving of 150 per cent. over what can be done with the hand saw.

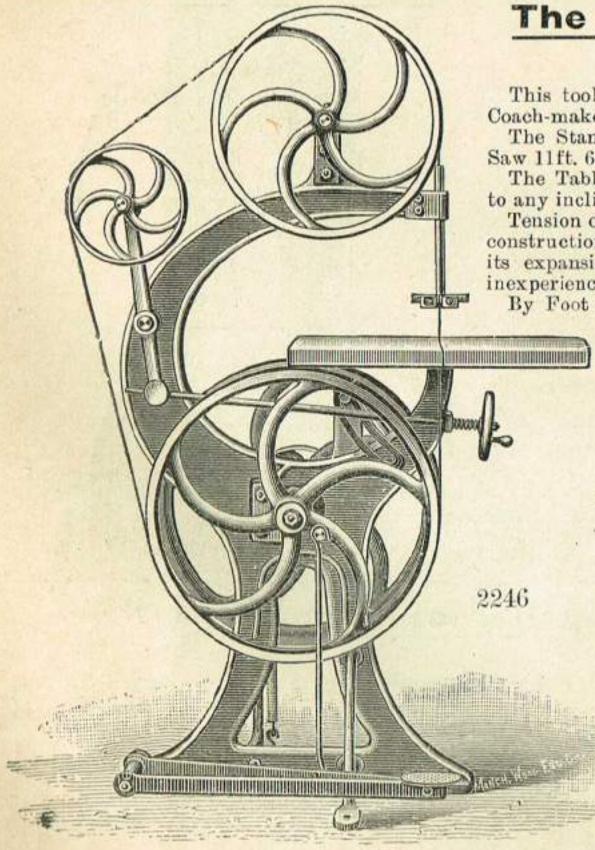
The Band Saw Apparatus is fitted with square table, made so as to cant over for cutting to any bevel. With this may be cut any irregular, curved, or ornamental design with an ease not attained before by any hand-power Machine. The Band Saw is fitted with a new arrangement for securing equal tension to the saw at all times.

The Pulleys are covered with Indiarubber so as to preserve the Set of the Saw, and has Angle Fence for Tenoning not shown on the Drawing.

Including two Circular Saws, (9in. and 14in.), one ⅜ Band Saw, six Rollers and Carriers for extending the Bench, three Change Wheels for Feed Motion, and one Screw Key		£20 0 0
If without Feed Motion, Rollers, and Carriers		18 0 0
Fitted with Boring Apparatus and one Patent Auger	extra	2 0 0
If either of the above is made so as to work either by steam or hand power	,,	0 10 0
Fitted with Mitre Fence	,,	0 10 0

The "Invicta" Band Saw Machine.

(Nett and Carriage Forward.)



2246

This tool has been specially designed for use of Joiners, Cabinet-makers, Coach-makers, Coach-builders, Wheel-wrights, Pattern-markers, etc., etc.

The Standard is all in one casting and self-contained, and admits of a Saw 11ft. 6in. long.

The Table (2ft. by 1ft. 6in.) is planed iron, and so fitted that it will cant to any inclination to allow of wood being cut either straight or on the bevel.

Tension of Saw. The saw-tension mechanism is of the simplest and safest construction, keeping the saw rigid for the cut and automatically allows for its expansion and contraction, and the adjustment can be made by an inexperienced person.

By Foot Power the saw can be driven and the timber controlled by the same person. Hard wood up to 3in. in thickness may thus easily be cut.

Foot and Hand Power. It can be supplied to be driven by foot and hand power if so ordered; this method necessitates two operators, and is useful for the heavier kinds of work.

Steam Power. Fast and Loose Pulleys and Belt-Striking Gear are fitted when required for Machine Driving.

The Driving Pulleys are light and even running, and throw very little strain upon the Saw-Band, and thus reduce the risks of breaking saws.

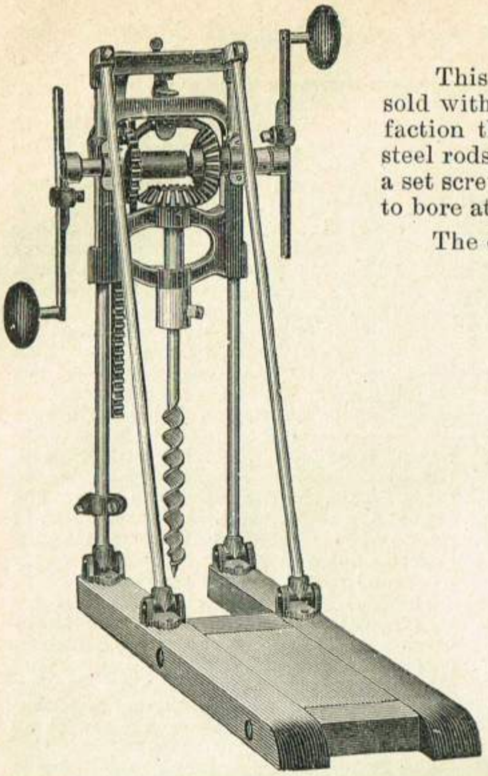
SPECIFICATION.

Total Height	5ft. 3in.
,, Length	3ft. 8in.
,, Width	2ft. 0in.
Approximate Weight	2cwt. 3qrs. 14lb.
Diameter of Bottom-driving Pulley	24in.
,, Top-driving Pulley	18½in.
,, Tension Pulley	9½in.

Fast and Loose Pulleys, 9in. in diameter, 2in. face.

PRICES.	£	s.	d.
Foot Power only	10	0	0
Foot and Hand Power...	10	10	0
Foot and Machine Power	11	0	0
Machine Power only	10	10	0

Miller's Falls Boring Machine.



This machine has been fully perfected in all its parts, and is now sold with full warrant that it will do better work and give better satisfaction than any other kind in use. The gate is made of $\frac{1}{2}$in. round steel rods; the braces are the same, and attach to the rods at the top by a set screw. When this set screw is loosened, the frame falls over so as to bore at any desired angle.

The depth of hole to be bored is fixed by a stop, as seen on the left-hand upright rod in the cut. When the gate strikes this stop a latch is lifted, and the machine throws itself into gear by the use of a spring, and the Auger is lifted out of the hole by continuing to turn the crank in the same direction.

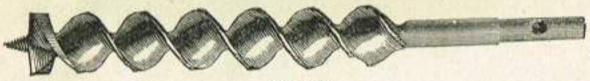
When the Auger is drawn from the hole the frame hangs itself up until the machine is moved to the next hole, then it is dropped down by turning the crank back until the Auger strikes the wood, when it is thrown out of gear and proceeds to bore the next hole. As seen in the cut, the machine has adjustable cranks which fully regulate its speed and power.

We do not desire the reputation of making the cheapest goods in the market, but we mean to deserve the name of making the best.

PRICES.

2247	Machine, without Augers ...	£1	15	0
	Ditto, with set of 10 Augers ...	3	8	6

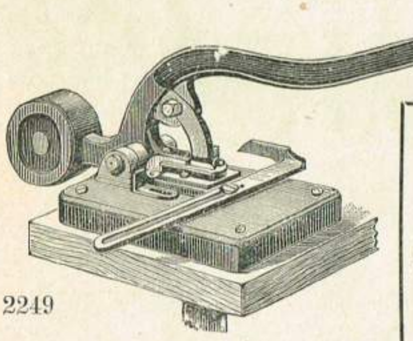
Boring Machine Augers.



2248

$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2in.
2/6	2/6	2/9	3/-	3/3	3/6	3/9	4/-	4/6	5/6 each.

London Pattern Venetian Blind Machine.

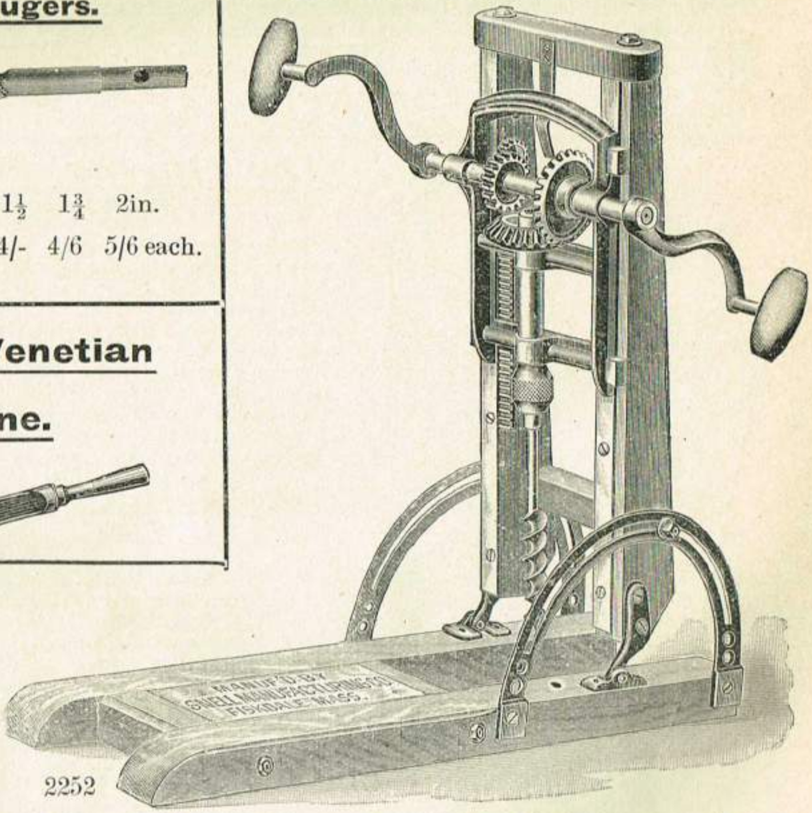


2249

Punch Cord Hole 1 by $\frac{3}{8}$in.

Price 32/6.

Improved Boring Machine.


MANUF'D BY
SNELL MANUFACTURING CO.
FISKDALE MASS.

2252

These Boring Machines are made from the best seasoned timber, and put together in a substantial manner, and will be found most useful and economical machines.

PRICES.

2250 Upright Boring Machine, 18/-
2251 Do., with set of 6 Augers to $1\frac{1}{2}$in. 35/6

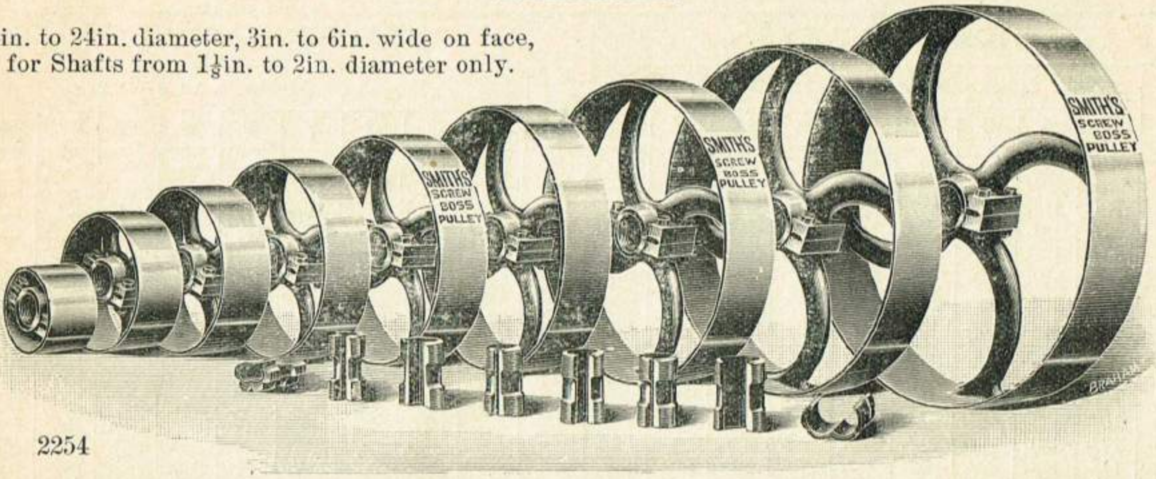
2252 Angular Boring Machine, 20/-
2253 Do., with set of 6 Augers to $1\frac{1}{2}$in. 37/6

Cast-iron Finished Belt Pulleys.

Smith's Patent "Convertible" Screw Boss and Interchangeable Screw Bush.

"O Series."

6in. to 24in. diameter, 3in. to 6in. wide on face,
for Shafts from 1⅛in. to 2in. diameter only.


SMITH'S SCREW BOSS PULLEY
SMITH'S SCREW BOSS PULLEY
SMITH'S SCREW BOSS PULLEY
BRAHAM

2254

Specially adapted for Export. Thousands in Use. Thousands being Sold.

This series of Smith's Patent Screw Boss and Interchangeable Screw Bush has now been completed and specially designed for Pulleys from 6in. to 24in. diameter, 3in. to 6in. wide on face, and for Shafts from 1⅛in. to 2in. diameter. *The Prices are greatly reduced*, and *this series* cannot be supplied *over* 24in. diameter, 6in. wide on face, or 2in. bore.

To secure a Pulley to a shaft by these improved means, it is simply necessary—the Pulley being placed on the shaft—to open the divided and screw-threaded Bush, and place same on the shaft; and the Pulley being rotated so as to screw its conical centre hole over the conical Bush, the latter will be caused to firmly grip the shaft. The Pulley is then securely fixed, ready for work, without keyway, key, or set screw; and the greater the power transmitted, the tighter the Bush will be caused to grip the shaft.

Enormous Advantages. No Keyways, Keys, or Set Screws. Self Fixing. Always Run True.
The only Perfect System for Keeping a Stock. One Pulley may be used on (or sold for) Shafting of 15 different diameters.

Greatly Reduced Price List.

WHOLE PULLEYS.

Diameter in Inches.	Breadth on Face, in Inches.				Diameter in Inches.
	3	4	5	6	
6	Under 4in. wide on face charged as 4in. Made to order only. Not kept in stock.	6/-	6/6	7/-	6
7		6/6	7/-	7/6	7
8		7/-	7/6	8/6	8
9		7/6	8/-	9/-	9
10		8/-	9/-	10/-	10
11		8/6	9/6	10/6	11
12		9/-	10/-	11/-	12
13		9/6	10/6	11/6	13
14		10/-	11/-	12/-	14
15		10/6	11/6	12/6	15
16		11/-	12/-	13/-	16
17		12/-	13/-	14/-	17
18		13/-	14/-	15/-	18
19		14/-	15/-	16/-	19
20		15/-	16/-	17/-	20
21		16/-	17/-	18/-	21
22		17/-	18/-	19/-	22
23		18/-	19/-	20/-	23
24		19/-	20/-	21/-	24

"O," SERIES.

6in. to 24in. diameter only. 3in. to 6in. wide on face only. 1⅛in. to 2in. bore only.

THIS SERIES cannot be supplied *over* 24in. diameter, 6in. wide on face, or 2-in. bore.

Flat or rounded on face. No extra charge for rounding.

SPLIT PULLEYS.

Diameter in Inches.	Breadth on Face, in Inches.				Diameter in Inches.
	3	4	5	6	
6	Under 4in. wide on face charged as 4in. Made to order only. Not kept in stock.	9/6	10/-	10/6	6
7		10/-	10/6	11/-	7
8		10/6	11/-	12/-	8
9		11/-	11/6	12/6	9
10		11/6	12/6	13/6	10
11		12/-	13/-	14/-	11
12		12/6	13/6	14/6	12
13		13/-	14/-	15/-	13
14		13/6	14/6	15/6	14
15		14/-	15/-	16/-	15
16		14/6	15/6	16/6	16
17		15/6	16/6	17/6	17
18		16/6	17/6	18/6	18
19		18/-	19/-	20/-	19
20		19/-	20/-	21/-	20
21		20/-	21/-	22/-	21
22		21/-	22/-	23/-	22
23		22/-	23/-	24/-	23
24		23/-	24/-	25/-	24

In ordering Pulleys, always say if Split or Whole, Flat or Rounded. Split Pulleys recommended.

NOTE.—Split Pulley and Flat Face always sent unless otherwise ordered.

For prices of Pulleys to 72in. diameter see next page. We also supply Wrought Iron Pulleys fitted with Smith's Screw Boss. Prices on Application.

Price List Cast-iron Finished Belt Pulleys.

Smith's Patent Screw Boss, or Ordinary Bore and Keywayed.

WHOLE PULLEYS.

Diam. in Inches.	Breadth of Face, in Inches.								
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
7	9/-	10/-	11/-	12/-	—	—	—	—	—
8	9/-	10/-	11/-	12/-	13/-	—	—	—	—
9	10/-	11/-	12/-	13/-	14/-	15/-	—	—	—
10	11/-	12/-	13/-	14/-	15/-	16/-	18/-	—	—
11	11/-	12/-	13/-	14/-	15/-	16/-	18/-	20/-	—
12	11/-	12/-	13/-	14/-	15/-	16/-	18/-	20/-	22/-
13	12/-	13/-	14/-	15/-	16/-	18/-	19/-	21/-	23/-
14	13/-	14/-	15/-	16/-	18/-	19/-	20/-	22/-	24/-
15	14/-	15/-	16/-	18/-	19/-	20/-	22/-	24/-	26/-
16	15/-	16/-	17/-	19/-	20/-	22/-	24/-	26/-	28/-
17	16/-	17/-	18/-	20/-	21/-	23/-	25/-	27/-	29/-
18	16/-	17/-	18/-	20/-	22/-	24/-	26/-	28/-	30/-
19	17/-	18/-	19/-	21/-	23/-	25/-	27/-	29/-	31/-
20	17/-	18/-	20/-	22/-	24/-	26/-	28/-	30/-	32/-
21	18/-	20/-	21/-	23/-	25/-	27/-	29/-	31/-	33/-
22	18/-	20/-	22/-	24/-	26/-	28/-	30/-	32/-	34/-
23	20/-	22/-	24/-	26/-	28/-	30/-	32/-	34/-	36/-
24	20/-	23/-	25/-	27/-	29/-	31/-	33/-	35/-	38/-
25	21/-	24/-	26/-	28/-	31/-	33/-	35/-	38/-	40/-
26	22/-	25/-	28/-	30/-	32/-	34/-	36/-	39/-	42/-
27	23/-	26/-	29/-	31/-	33/-	35/-	38/-	41/-	44/-
28	24/-	27/-	30/-	33/-	35/-	37/-	40/-	43/-	46/-
29	25/-	28/-	31/-	34/-	36/-	38/-	41/-	44/-	47/-
30	26/-	29/-	32/-	35/-	37/-	39/-	42/-	45/-	48/-
31	27/-	30/-	33/-	37/-	39/-	41/-	44/-	47/-	50/-
32	28/-	31/-	34/-	38/-	40/-	42/-	45/-	48/-	51/-
33	29/-	32/-	35/-	39/-	41/-	44/-	47/-	50/-	53/-
34	30/-	33/-	36/-	40/-	42/-	46/-	49/-	52/-	55/-
35	31/-	34/-	37/-	41/-	44/-	47/-	50/-	53/-	56/-
36	32/-	35/-	38/-	42/-	45/-	48/-	51/-	54/-	57/-
38	35/-	38/-	41/-	45/-	49/-	52/-	55/-	59/-	62/-
39	36/-	39/-	43/-	47/-	51/-	55/-	59/-	64/-	69/-
40	38/-	41/-	45/-	49/-	53/-	57/-	62/-	67/-	72/-
42	41/-	45/-	49/-	53/-	57/-	61/-	66/-	72/-	78/-
44	43/-	47/-	51/-	55/-	59/-	63/-	69/-	75/-	81/-
45	45/-	49/-	53/-	57/-	61/-	65/-	71/-	77/-	84/-
46	48/-	52/-	56/-	60/-	64/-	68/-	74/-	80/-	87/-
48	50/-	54/-	58/-	62/-	66/-	71/-	77/-	83/-	90/-
50	—	—	61/-	65/-	70/-	75/-	81/-	87/-	93/-
51	—	—	63/-	68/-	73/-	78/-	84/-	90/-	96/-
54	—	—	68/-	73/-	78/-	84/-	90/-	97/-	104/-
57	—	—	74/-	79/-	84/-	90/-	96/-	104/-	112/-
60	—	—	80/-	85/-	90/-	96/-	102/-	110/-	120/-
63	—	—	96/-	98/6	101/-	106/-	112/-	120/-	130/-
66	—	—	104/-	106/6	109/-	114/-	120/-	130/-	140/-
69	—	—	112/-	114/6	117/-	122/-	130/-	140/-	150/-
72	—	—	120/-	122/6	125/-	130/-	140/-	150/-	160/-

SPLIT PULLEYS.

Diam. in Inches.	Breadth of Face, in Inches.								
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
7	12/6	13/6	14/6	15/6	—	—	—	—	—
8	12/6	13/6	14/6	15/6	16/6	—	—	—	—
9	13/6	14/6	15/6	16/6	17/6	18/6	—	—	—
10	14/6	15/6	16/6	17/6	18/6	19/6	21/6	—	—
11	14/6	15/6	16/6	17/6	18/6	19/6	21/6	23/6	—
12	15/6	16/6	17/6	18/6	19/6	20/6	22/6	24/6	26/6
13	16/6	17/6	18/6	19/6	20/6	22/6	23/6	25/6	27/6
14	17/6	18/6	19/6	20/6	22/6	23/6	24/6	26/6	28/6
15	18/6	19/6	20/6	22/6	23/6	24/6	26/6	28/6	30/6
16	19/6	20/6	21/6	23/6	24/6	26/6	28/6	30/6	32/6
17	20/6	21/6	22/6	24/6	25/6	27/6	29/6	31/6	33/6
18	20/6	21/6	22/6	24/6	26/6	28/6	30/6	32/6	34/6
19	21/6	22/6	23/6	25/6	27/6	29/6	31/6	33/6	35/6
20	22/6	23/6	25/6	27/6	29/6	31/6	33/6	35/6	37/6
21	23/6	25/6	26/6	28/6	30/6	32/6	34/6	36/6	38/6
22	23/6	25/6	27/6	29/6	31/6	33/6	35/6	37/6	39/6
23	25/6	27/6	29/6	31/6	33/6	35/6	37/6	39/6	41/6
24	25/6	28/6	30/6	32/6	34/6	36/6	38/6	40/6	43/6
25	26/6	29/6	31/6	33/6	36/6	38/6	40/6	43/6	45/6
26	27/6	30/6	33/6	35/6	37/6	39/6	41/6	44/6	47/6
27	28/6	31/6	34/6	36/6	38/6	40/6	43/6	46/6	49/6
28	29/6	32/6	35/6	38/6	40/6	42/6	45/6	48/6	51/6
29	30/6	33/6	36/6	39/6	41/6	43/6	46/6	49/6	52/6
30	32/6	35/6	38/6	41/6	43/6	45/6	48/6	51/6	54/6
31	33/6	36/6	39/6	43/6	45/6	47/6	50/6	53/6	56/6
32	34/6	37/6	40/6	44/6	46/6	48/6	51/6	54/6	57/6
33	35/6	38/6	41/6	45/6	47/6	50/6	53/6	56/6	59/6
34	36/6	39/6	42/6	46/6	48/6	52/6	55/6	58/6	61/6
35	37/6	40/6	43/6	47/6	50/6	53/6	56/6	59/6	62/6
36	38/6	41/6	44/6	48/6	51/6	54/6	57/6	60/6	63/6
38	41/6	44/6	47/6	51/6	55/6	58/6	61/6	65/6	68/6
39	43/6	46/6	50/6	54/6	58/6	62/6	66/6	71/6	76/6
40	45/6	48/6	52/6	56/6	60/6	64/6	69/6	74/6	79/6
42	48/6	52/6	56/6	60/6	64/6	68/6	73/6	79/6	85/6
44	50/6	54/6	58/6	62/6	666/	70/6	76/6	82/6	88/6
45	52/6	56/6	60/6	64/6	68/6	72/6	78/6	84/6	91/6
46	55/6	59/6	63/6	67/6	71/6	75/6	81/6	87/6	94/6
48	57/6	61/6	65/6	69/6	73/6	78/6	84/6	90/6	97/6
50	—	—	70/6	74/6	79/6	84/6	90/6	96/6	102/6
51	—	—	72/6	77/6	82/6	87/6	93/6	99/6	105/6
54	—	—	77/6	82/6	87/6	93/6	99/6	106/6	113/6
57	—	—	83/6	88/6	93/6	99/6	105/6	113/6	121/6
60	—	—	89/6	94/6	99/6	105/6	111/6	119/6	129/6
63	—	—	108/6	111/-	113/6	118/6	124/6	132/6	142/6
66	—	—	116/6	119/-	121/6	126/6	132/6	142/6	152/6
69	—	—	124/6	127/-	129/6	134/6	142/6	152/6	162/6
72	—	—	132/6	135/-	137/6	142/6	152/6	162/6	172/6

The above prices to 36in. diam. are for Bores from 1½in. to 3in. diam (No 1 Series).
The above prices from 38in. to 72in. diameter are for Bores from 1½in. to 4½in. diam. (Nos. 1 and 2 Series).
For Bores from 3in. to 4½in. diam. (No. 2 Series) add 2/- each Pulley to 36in. diam.
,, ,, 4½ ,, 6 ,, (No. 3 Series) ,, 3/6 ,, ,, 36 ,,
,, ,, 4½ ,, 6 ,, (No. 3 Series) ,, 3/6 ,, ,, 39 to 72 ,,

Pulleys Supplied Any Width. Prices over 12in. Wide on Application.

Flat or Rounded on Face. No Extra Charge for Rounding.

Pulleys made extra strong are subject to a proportional additional charge. Split Pulleys recommended.

In Ordering Pulleys, always say if Split or Whole, Flat or Rounded, and state if Patent Screw Boss or Ordinary Bore are required.

Cast Pulleys—Whole.

Faces Flat or Rounded. Keyways Cut or Set-screws Fitted.

LIGHT. 2255 ANY BORE UP TO 1½IN.

Diameter	4	5	6	7	8	9	10	12	14	16	18	20in.
2in. Face	1/10	2/3	2/6	2/10	3/2	3/9	4/3	4/9	5/9	6/8	7/6	8/3 each.
3in. „	2/3	2/9	3/-	3/6	4/3	5/-	5/6	6/-	7/3	8/-	9/-	10/3 „

2255A ANY BORE UP TO 2IN.

Diameter	4	5	6	7	8	9	10	12	14	16	18	20in.
3in. Face	3/6	3/10	4/6	5/-	5/6	6/2	6/9	7/3	8/3	9/6	10/6	11/9 each.

2255B ANY BORE UP TO 3IN.

Diameter	4	5	6	7	8	9	10	12	14	16	18	20in.
4in. Face	4/9	5/6	6/-	6/6	7/-	7/6	8/-	9/3	10/-	11/-	12/9	15/- each.
5in. „	5/6	6/3	6/9	7/3	7/9	8/3	9/-	10/-	10/9	12/-	13/6	16/- „
6in. „	—	—	7/3	8/-	8/9	9/3	10/-	11/-	11/9	13/-	15/-	16/9 „
8in. „	—	—	—	—	13/3	14/-	14/9	16/6	17/9	19/-	21/-	24/- „

Prices of Larger Sizes on application.

Cast Split Pulleys.

Flat or Round Faces. Keyways Cut or Set-screws Fitted.

2255C ANY BORE UP TO 3IN.

Diameter	5	6	7	8	9	10	12	14	16	18	20in.
3in. Face	6/6	7/-	7/6	8/3	9/-	9/6	10/6	11/9	13/-	—	— each.
4in. „	7/6	8/3	8/9	9/6	10/3	11/-	12/3	13/6	15/-	18/-	21/- „
5in. „	8/6	4/-	9/6	10/-	10/6	12/-	13/6	14/9	16/-	20/-	22/6 „
6in. „	—	9/6	10/3	11/3	12/-	13/-	14/9	16/-	17/3	23/-	26/- „

Always sent with FLAT faces unless ordered otherwise. We shall be pleased to quote prices of other sizes on application.

Cast Pulleys—Fast and Loose.

With Round Faces.

2255D These have Both Sides of Boss Faced. Fast Pulley has either Keyway or Set Screw, and Loose Pulley has oil-hole drilled.

PRICE PER PAIR.

Faces.	Diameter	6	7	8	9	10	12	14	16	18	20
„	2in. wide, any bore to 1½in.	5/6	6/6	7/6	8/6	9/6	10/6	12/3	14/-	15/6	17/-
„	3in. „ „ „ 1½in.	7/-	8/3	9/6	10/6	11/6	13/-	14/6	17/-	19/-	21/6
„	3in. „ „ „ 2in.	9/6	10/6	11/6	13/-	14/6	15/6	17/-	18/6	21/-	23/6

If loose pulley required bushed, price will be extra. Extra for oil tube in loose Pulleys, 1/6. Loose Pulleys can be run on a sleeve, if desired, at extra cost, thus saving wear on shaft.

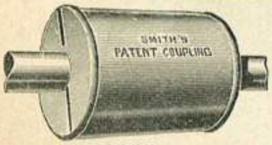
Steel Shafting.

Turned True to Whitworth Gauge and Polished Bright.

2256	Diameter...	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4in.
	PRICE ...	10d.	1/1	1/3	1/6	1/9	2/4	2/10	3/3	4/-	4/6	5/6	7/- per foot.

For intermediate sizes, add 10 per cent. to next larger size.
Fractions of 1ft. charged as 1ft. Prices under 6ft., extra for cutting.

Smith's Patent Independent Grip Couplings.



2257

Bore ..	1½	1¾	2	2¼	2½	2¾	3	3¼	2½	3¾	4in.
PRICE ...	18/-	20/-	22/-	25/-	27/6	32/6	35/-	42/6	47/6	57/6	65/- each.

For intermediate sizes, same price as next larger size.

Coupling to take two sizes of shafts charged at above prices, taking the larger end.

Ordinary "J" Hangers.

2258 **Light.**

Bore. in.	Distance from Beam to Centre.	Price.	Bore. in.	Distance from Beam to Centre.	Price.
1	8	5/-	2	12	13/6
1	10	5/3	2	14	14/6
1¼	10	6/6	2	16	15/6
1¼	12	7/-	2¼	14	17/6
1¼	14	7/6	2¼	16	18/9
1½	10	8/-	2¼	18	21/-
1½	12	8/6	2½	14	23/-
1½	14	9/-	2½	16	24/-
1¾	10	10/6	2½	18	25/-
1¾	12	11/6	2½	20	26/-
1¾	14	12/-			

This Hanger is not made larger than 2½in.

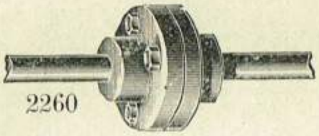
2259 **Medium.**

Bore. in.	Distance from Beam to Centre.	Price.	Bore. in.	Distance from Beam to Centre.	Price.
1¼	10	7/9	2	16	20/-
1¼	12	8/-	2	18	21/6
1¼	14	8/6	2¼	14	24/6
1½	10	10/-	2¼	16	25/6
1½	12	10/9	2¼	18	26/6
1½	14	12/-	2¼	20	27/6
1¾	12	14/6	2½	16	29/6
1¾	14	15/9	2½	18	31/-
1¾	16	17/-	2½	20	32/-
2	12	17/6	2½	22	33/-
2	14	18/9			

Intermediate lengths of drop at proportionate prices. Intermediate bores, etc., extra.

Flanged Couplings.

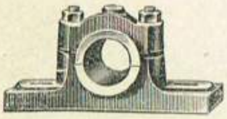
Turned Bright all over.



2260

Bore	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4in.	
Price...	6/-	7/-	7/6	10/-	12/-	15/-	18/-	21/-	25/-	28/-	33/-	42/6	per pair.
Keying on and refacing after, extra	4/-	4/6	5/-	6/-	6/6	7/-	7/6	8/6	9/6	11/6	12/6	14/6	„

Plummer Blocks.



2261 Fitted with Top and Bottom Brasses. Length of Bearings equals 1½ diameters.

Bore ...	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4in.	
Price ...	2/6	3/3	4/-	5/-	6/6	8/6	10/6	13/6	16/-	21/-	25/-	35/-	each.

Heavy.

Length of Bearings 1½ diameters, plus ⅝in. Planed on Sole.

Price ...	4/-	5/-	6/3	7/6	10/3	12/9	15/6	19/6	25/6	32/-	39/-	50/-	„

Loose Collars.

2262 Turned all over and Polished.

Bore	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4in.	
Wrought-iron, with one Set Screw	1/3	1/6	1/9	2/-	2/3	2/6	2/9	3/3	3/6	4/-	4/6	5/6	each.
Wrought-iron, with two Set Screws	1/9	2/-	2/3	2/6	2/9	3/-	3/6	4/-	4/3	4/6	5/-	7/-	„
Wrought-iron, with one Sunk Set Screw	2/-	2/2	2/4	2/8	3/-	3/3	3/9	4/3	4/9	5/3	6/-	9/-	„
Wrought-iron, with two Sunk Set Screws	2/6	2/9	3/-	3/3	3/9	4/-	4/6	5/3	5/9	7/-	7/9	11/3	„
Cast-iron Split Grip	1/9	2/6	3/-	3/9	4/-	4/6	5/3	6/-	6/9	8/-	8/9	11/9	„

Ordinary Sling Hangers.

2263 Planed for Plummer Block, but prices not including Plummer Block.

For Plummer Blocks ...	2in.	2½in.	3in.	3½in.	4in.
9in. to centre	8/-	—	—	—	—
13in. ,, ,, ...	9/-	15/-	21/-	32/6	—
16in. ,, ,, ...	11/-	17/-	23/6	—	—
25in. ,, ,, ...	14/-	22/-	30/-	38/6	50/-

Bolts included. Prices of other sizes on application.

A Standards.

2264 Planed for Plummer Block, but prices not including Plummer Blocks.

For Plummer Blocks ...	1½in.	2in.	2½in.	3in.	4in.
11in. to centre	5/-	8/-	—	—	—
14in. ,, ,, ...	5/6	9/-	15/-	18/-	—
19in. ,, ,, ...	6/6	10/-	16/-	20/-	32/-
25in. ,, ,, ...	9/-	12/-	18/6	23/-	35/-

Bolts included.

Wrought-iron Pulleys—Split.

2265 (Can be had solid at same price *if specially ordered.*) Flat or Round Faces.

Diam. in Inches.	BREADTH IN INCHES.										Diam. in Inches.
	3in.	4in.	5in.	6in.	7in.	8in.	9in.	10in.	11in.	12in.	
10in.	10/6	11/6	12/6	14/-	15/6	16/6	18/6	20/6	23/6	25/6	10in.
12 ,,	11/6	12/6	13/6	14/6	16/-	17/6	19/6	21/6	24/-	26/6	12 ,,
14 ,,	12/-	13/6	14/6	15/6	16/6	18/-	20/-	22/-	24/6	27/6	14 ,,
16 ,,	13/6	14/6	15/6	16/6	18/-	19/6	21/6	23/6	26/-	28/6	16 ,,
18 ,,	14/6	16/-	17/6	19/6	20/6	22/-	23/6	24/6	27/6	29/6	18 ,,
20 ,,	16/-	18/-	20/-	21/-	23/-	24/-	25/6	26/6	28/-	30/6	20 ,,
22 ,,	18/-	19/6	21/6	24/-	25/6	26/6	28/-	29/6	31/6	33/-	22 ,,
24 ,,	20/-	22/-	23/6	26/-	27/6	28/6	30/6	32/-	34/-	36/-	24 ,,
26 ,,	22/6	24/-	26/-	28/-	30/-	31/6	33/6	34/6	36/6	38/6	26 ,,
28 ,,	25/6	27/6	28/6	30/-	32/-	34/-	36/-	38/-	40/-	41/6	28 ,,
30 ,,	26/6	28/6	30/6	32/-	34/-	36/-	38/-	39/6	41/6	44/-	30 ,,
32 ,,	28/6	30/-	32/-	34/-	36/-	38/-	40/-	42/-	44/-	46/-	32 ,,
34 ,,	30/-	32/-	34/-	36/-	38/-	40/-	42/-	44/-	46/-	48/-	34 ,,
36 ,,	32/-	34/-	36/-	38/-	40/-	42/-	44/-	46/-	48/-	50/6	36 ,,
38 ,,	36/-	38/6	41/-	42/-	44/-	46/-	48/-	50/6	54/-	56/-	38 ,,
40 ,,	38/-	40/-	42/6	45/-	47/6	49/6	52/-	55/6	57/6	60/-	40 ,,
42 ,,	39/6	42/-	45/-	48/-	50/-	52/6	55/-	58/-	66/6	64/-	42 ,,
44 ,,	44/6	47/6	50/6	53/-	55/6	57/6	60/-	63/6	67/-	69/-	44 ,,
46 ,,	48/-	50/6	53/-	56/-	57/6	60/-	62/6	65/6	69/-	72/-	46 ,,
48 ,,	50/-	52/6	55/-	57/-	59/-	61/6	64/-	67/-	70/6	73/6	48 ,,
50 ,,	54/-	56/6	59/-	60/6	63/6	66/-	68/-	71/6	74/6	78/-	50 ,,
52 ,,	58/-	60/6	63/6	65/-	67/6	70/-	72/-	75/6	78/6	82/-	52 ,,
54 ,,	62/-	64/6	67/-	69/-	71/6	74/-	76/-	79/6	82/6	86/-	54 ,,
56 ,,	66/-	68/6	69/6	73/-	75/6	78/-	80/-	83/6	86/6	89/-	56 ,,
58 ,,	70/-	73/-	76/-	77/6	79/6	82/-	84/-	87/6	90/6	93/6	58 ,,
60 ,,	74/-	76/6	79/-	80/6	83/6	87/-	88/-	91/6	94/6	98/-	60 ,,

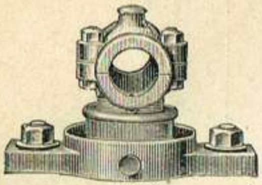
BORE to 48in. up to 3in.; to 60in. up to 4in. Extra for boring to larger than above, 2/6 per inch, or part of an inch.

These Pulleys can be supplied up to 30ft. in diameter and any breadth. Capable of transmitting 600 h.p.

Rope Pulleys, Flanged Pulleys, Cone Pulleys, Spur, Bevel and Mitre Wheels.—We shall be pleased to submit quotations against specification accompanied by full details, for any of these goods, and can give prompt delivery.

Smiths' Patent Swivel Adjustable Plummer Blocks.

Length of Bearing equal to Four Diameters.

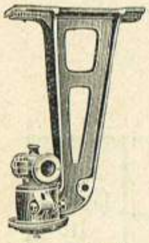

2266

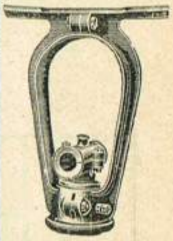
Bore ... ... in.	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5
Ordinary Oiling. C.I. Bearings.	10/-	11/6	12/6	15/-	17/6	22/6	27/6	37/6	40/-	55/-	70/-	90/-
Self Oiling. G.M. Bottom Lining.	14/-	16/-	18/-	21/6	25/-	33/-	40/-	55/6	61/-	80/-	102/6	125/-

Smiths' Patent Swivel Hangers.

Adjustable Vertically.

Length of Bearing equal to Four Diameters.


Open-sided.


Double-sided.

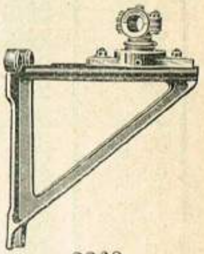
2267

Drop to Centre of Shaft.	Bore in Inches, and Price each, Cast-iron Bearings, Ordinary Oiling. Open-sided or Double-sided.									Double-sided only.		
	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5
10in.	13/-	14/-	19/-	20/-	23/-	26/-	—	—	—	—	—	—
13in.	14/6	15/6	20/-	21/-	25/6	28/-	35/-	—	—	—	—	—
16in.	16/-	17/-	21/-	22/-	27/-	30/-	37/6	50/-	52/6	80/-	100/-	125/-
19in.	18/6	19/6	22/-	23/-	29/-	31/6	40/-	52/6	55/-	85/-	105/-	132/6
22in.	21/-	22/-	24/6	25/6	31/6	33/-	42/6	55/-	57/6	90/-	110/-	142/6
25in.	24/-	25/-	28/-	29/-	36/-	40/-	45/-	57/6	60/-	95/-	115/-	155/-
27in.	—	—	—	—	—	—	47/6	60/-	65/-	100/-	120/-	160/-
30in.	—	—	—	—	—	—	50/-	62/6	70/-	105/-	125/-	170/-
For Self-oiling Bearing with G. M. Bottom Lining, add to above Prices	4/-	4/6	5/6	6/6	7/6	10/6	12/6	18/-	21/-	25/-	32/6	35/-

When ordering say if "J" or Sling Hanger, and kind of Bearing required.

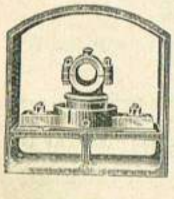
Wall Brackets.

Maximum Overhang from wall to Centre of Shaft.	Bore in inches, and PRICE each, **including** Swivel **Plummer Block,** Ordinary Oiling, and Cast-iron Bearings.									
	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4
10in.	15/-	16/6	—	—	—	—	—	—	—	—
13 ,, ...	16/6	18/-	21/-	23/6	30/-	35/-	—	—	—	—
16 ,, ...	18/6	20/-	22/6	25/-	32/6	37/6	47/6	57/6	—	—
19 ,, ...	20/6	22/-	25/-	27/6	35/-	40/-	50/-	60/-	72/6	87/6
22 ,, ...	22/6	24/-	27/6	30/-	37/6	42/6	52/6	62/6	75/-	90/-
25 ,, ...	24/6	26/-	30/-	32/6	40/-	45/-	55/-	65/-	77/6	92/6
For Self-oiling Swivel Plummer Block, G.M. Bottom Lining... *add*	4/-	4/6	5/6	6/6	7/6	10/6	12/6	18/-	21/-	25/-


2268

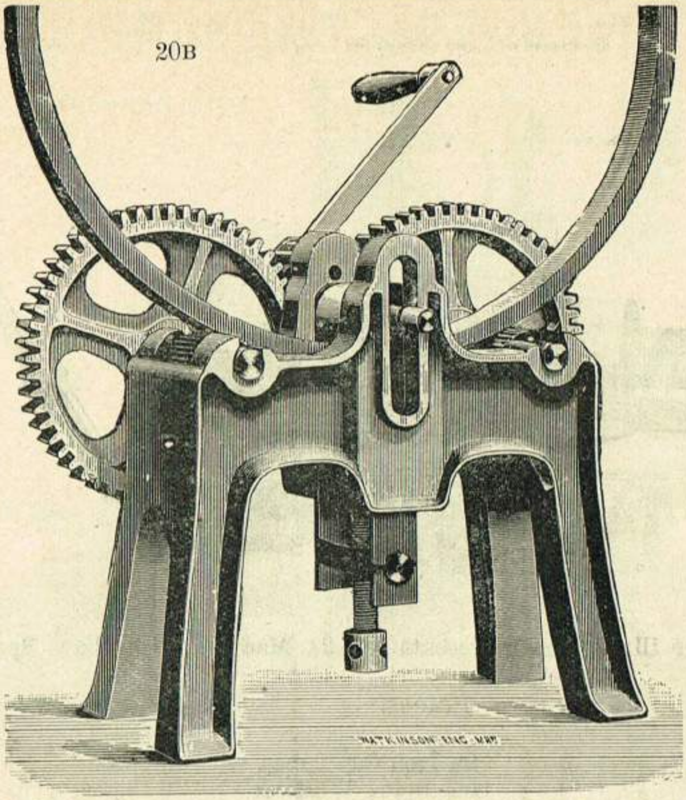
Prices of Larger Sizes on application.

Wall Boxes.


2269

Width.	Bore in inches, and PRICE each, **including** Swivel **Plummer Blocks,** ordinary oiling. Cast-iron Bearings.									
	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4
4½in.	16/-	17/6	20/6	23/-	29/-	34/-	—	—	—	—
9 ,, ...	21/-	22/6	27/6	30/-	35/-	40/-	50/-	65/-	67/6	95/-
14 ,, ...	—	—	—	—	42/-	50/-	60/-	75/-	77/6	105/-
For Self-oiling Swivel Plummer Block, G.M. Bottom Lining...*add*	4/-	4/6	5/6	6/6	7/6	10/6	12/6	18/-	21/-	25/-

Tyre Bending Machine—For Hand Power.



2270

(Nett and
Carriage
Forward.)

These Machines have a solid cast-iron standard, with strong gearing, the handle is wrought-iron with hard wood fitting for hand power. The outside rollers are fluted and made of steel, properly hardened, the centre roller is adjustable, pressure is effected by strong screw underneath the machine to bend any desired sweep the first time through, and the top roller is easily withdrawn so that a welded tire can be placed in the machine for finishing.

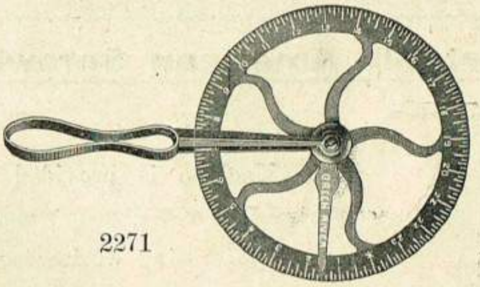
Every machine is warranted to do the work specified, and they are strong, well made and durable.

No. 20B Machine is made with Powerful Double Gear.

	20	20A	20B
Machine to bend bars	3½in. by ⅞in.	4½in. by 1in.	6½in. by 1¼in.
Approximate Weight	1¾ cwt.	2½ cwt.	4½ cwt.
Price	£3 15s.	£4 10s.	£8 5s.
Price extra for Hand and Steam Power...	14/-	16/-	20/-

Each Machine is made from different Models, and is larger in proportion.

Tyre Measuring Wheel, Graduated.



2271

The Graduated Tyre Wheel, a drop forging, is made so that the figures and lines are raised above the surface of the wheel and cannot be filled or defaced with rust or dirt. It is a perfect-running wheel, turned carefully in a lathe, exactly 24in. in circumference, and accurately graduated.

The index hand saves trouble of marking with chalk, and the whole, made of metal, is light. accurately fitted, handy, and strong.

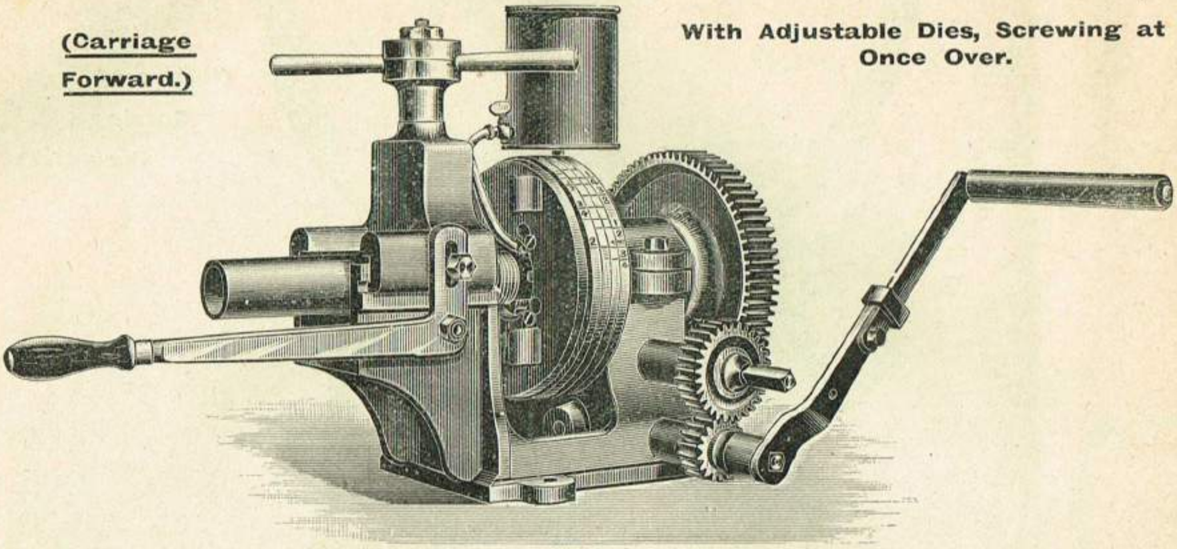
Price 7/6 each.

Improved Portable Hand-power Screwing Machine,

For Iron Gas Tube or Bolts.

(Carriage Forward.)

With Adjustable Dies, Screwing at Once Over.



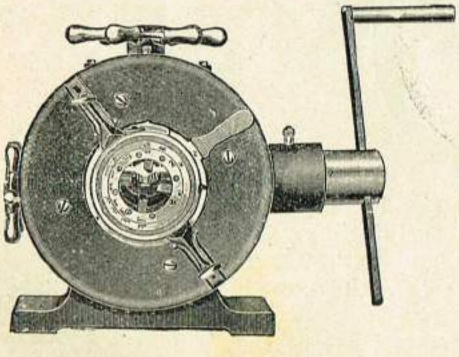
2272 The illustration represents No. 2A Machine with Extra Speed Wheels.

PRICES.

	With Adjustable Dies.		
	£	s.	d.
No. 1A Size, for Screwing ¼ ⅜ ½ ¾ 1in. Iron Gas Tubes, with three sets of Dies ...	8	0	0
„ 1A „ „ ½ ⅝ ¾ ⅞ 1in. Bolts, Whitworth's thread, with five sets of Dies...	9	10	0
„ 2A „ „ 1 1¼ 1½ 1¾ 2in. Iron Gas Tubes, with one set of Dies ...	11	0	0
„ 2A „ „ ¼ ⅜ ½ ¾ 1 1¼ 1½ 1¾ 2in. Iron Gas Tubes, with three sets of Dies	13	0	0
„ 2A „ „ 1 1⅛ 1¼ 1⅜ 1½in. Bolts, Whitworth's thread, with three sets of Dies...	13	0	0
„ 2A „ „ ½ ⅝ ¾ ⅞ 1 1⅛ 1¼ 1⅜ 1½in. Bolts, Whitworth's thread, with seven sets of Dies...	16	0	0
„ 2C „ „ 1½ 1¾ 2 2¼ 2½ 3in. Iron Gas Tubes, with one sets of Dies ...	17	10	0
„ 2C „ „ 1 1¼ 1½ 1¾ 2 2¼ 2½ 3in. Iron Gas Tubes, with two sets of Dies...	19	0	0
„ 3A „ „ 2 2¼ 2½ 3 3½ 4in. Iron Gas Tubes, with one set of Dies ...	24	0	0

	1A.	2A.	2C.	3A.
Extra Adjustable Dies	16/-	20/-	28/-	33/- per set.
Cutting-off Apparatus, for Tube	16/-	28/-	30/-	33/- each.
Extra Speed Wheels, for small sizes	20/-	25/-	32/-	40/- per pair.
Extra Fitted with Fast and Loose Pulleys or Three-speed cone to work by power	35/-	40/-	48/-	54/- each.
Extra for Overhead Driving Gear	85/-	110/-	145/-	160/- „
Extra if Mounted on Cast-iron Stand	40/-	50/-	70/-	85/- „

Improved Portable American Screwing Machines.



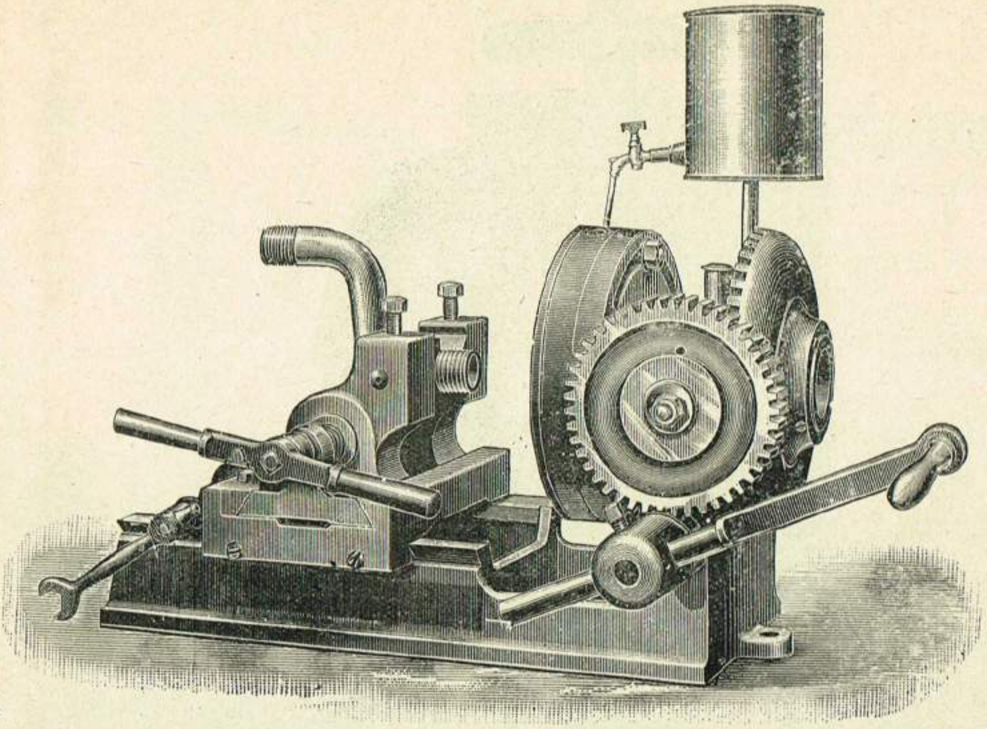
2273

This Machine is provided with quick-opening and self-centering Dies and Vice, cutting ½in. ¾in. 1in. 1¼in. 1½in. and 2in Pipes. The Setting device is a fulcrum clamp, quickly and easily set and released without running back over the finished thread.

Price ... ... £12 10s.

Improved Portable Screwing Machine.

With Adjustable Dies, for Tubes, also Bends and Short Pieces.



2274

The type of Dies used in this Machine are adjustable, and it also has the additional advantage of an improved open top vice, which allows bends or any irregularly-shaped pieces of tube to be properly screwed without difficulty; moreover, very short pieces of tube can be screwed by means of this arrangement of vice, as the jaws come close up to the dies. As the dies in this Machine are adjustable, any variation in the diameter of the tubes can be easily dealt with, and long screws or tight joints can be made with equal facility.

This Machine is extra heavy and substantial, a first-class tool in every way.

PRICES, PATTERN No. 19078.

	£	s.	d.
For Screwing Tubes 1in., 1¼in., 1½in., 1¾in., 2in.	12	0	0
„ ¼in., ⅜in., ½in., ¾in., 1in., 1¼in., 1½in., 1¾in., 2in.	14	0	0
„ 2in., 2¼in., 2½in., 3in.	23	0	0
„ 1in., 1¼in., 1½in., 1¾in., 2in., 2¼in., 2½in., 3in.	24	0	0
„ 2in., 2¼in., 2½in., 3in., 3½in., 4in.	33	0	0
„ 1in., 1¼in., 1½in., 1¾in., 2in., 2¼in., 2½in., 3in., 3½in., 4in. ...	34	0	0
„ 3in., 3½in., 4in., 4½in., 5in.	42	10	0
„ 2in., 2½in., 3in., 3½in., 4in., 4½in., 5in.	45	0	0

Including arrangement by which the speed of the larger Machines when screwing small sizes is increased.

EXTRAS.

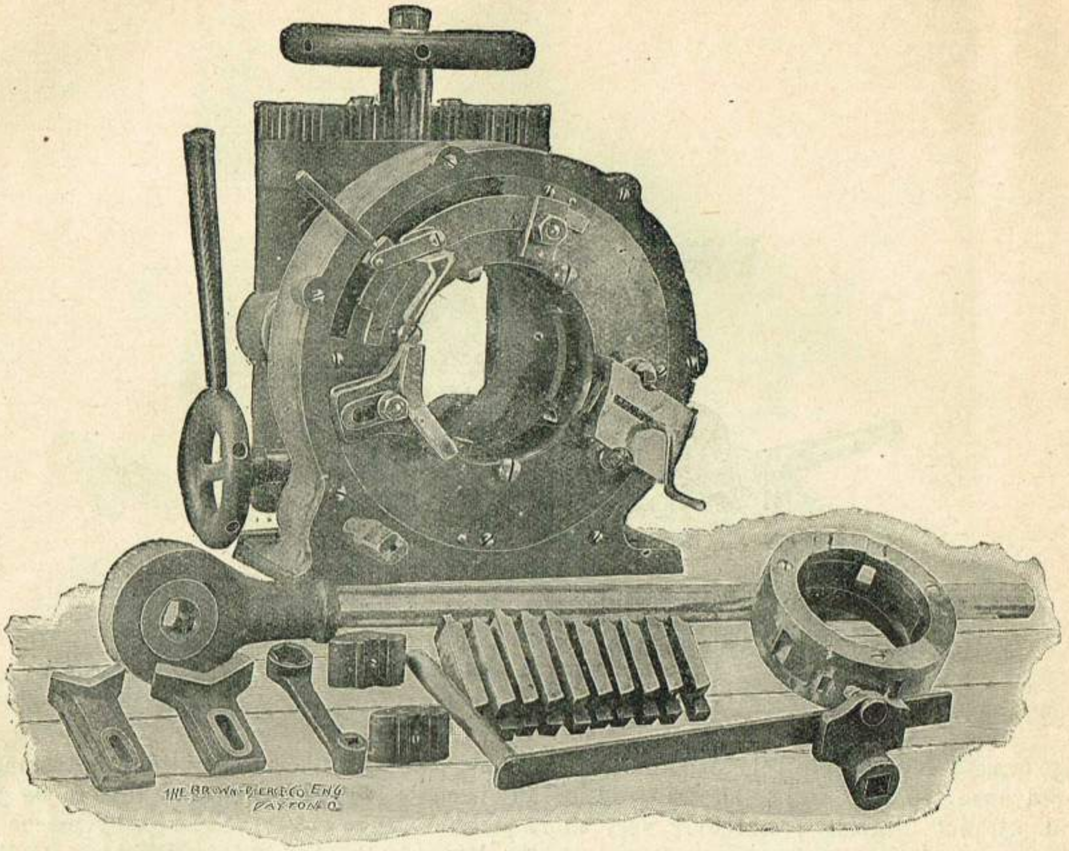
For Machines screwing up to	2in.	3in.	4in.	5in.
Extra Dies, right or left hand	15/-	20/-	30/-	50/-
Cutting-off Apparatus	30/-	40/-	55/-	75/-
Pulleys for Steam Power	50/-	60/-	70/-	70/-
Overhead Motion	100/-	120/-	150/-	150/-
Mounted on substantial Cast-iron Stand	40/-	60/-	75/-	75/-

Keep the dies well supplied with good oil, otherwise the threads will not be cut clean, but will tear, and be careful that there is no dirt or swarf behind the dies to prevent them working in their proper position.

Every Machine is thoroughly tested before it leaves, every pair of dies being tried upon tube, and the result kept for reference, duly ticketed with name and date.

American Pipe Threading Machines,

Nos. 5, 6, 9, 11.



2275

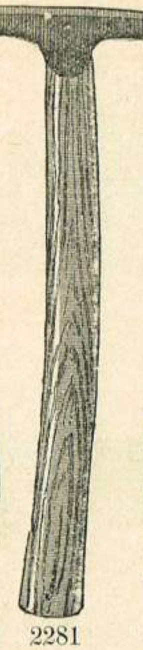
The above illustration represents our Nos. 5, 6, 9, and 11 Machines, a portable Hand Pipe Threading and Cutting Machine. Power is applied by either crank or ratchet lever to the shaft of the pinion, which engages the geared wheel enclosing the dies. The gears are completely housed from dust, and chips are not accessible to any part of the machine to its detriment. These machines have our Standard Adjustable Quick Opening and Closing Die Head, and our improved Cutting-Off Knife. The chasers are five in number for our Nos. 5 and 6 machines, and six in number for our No. 9 machine, and eight in number for our No. 11 machine. They are set by graduation to any size desired, are released from threading while in motion, opened to permit the pipe to be cut off, and closed instantly and positively, one set being used to thread several sizes of pipe. They can be sharpened by grinding, and are readily replaced by chasers, cutting any style or pitch of thread, either right or left. The vice is self-centering, is actuated by rack and pinion to feed the pipe into the chasers. These machines do better and more rapid work, both in threading and cutting off, than any other hand machine on the market. They have a greater range of work and quicker changes from size to size of pipe.

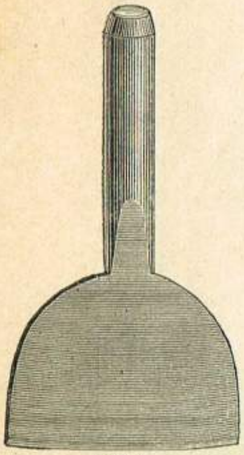
PRICES.	£	s.	d.
No. 5 Machine, with two sets of Chasers, for 1in. to 4in. pipe, inclusive, R.H. ...	25	0	0
Extra Chasers, R. or L., five per set	1	5	0
Weight, 220lb. Export shipping weight, 400lb. Cubic measurement, 5ft.			
No. 6 Machine, with three sets of Chasers, for 1in. to 6in. pipe, inclusive, R.H. ...	47	10	0
Extra Chasers, R. or L., five per set	1	5	0
Weight, 320lb. Export shipping weight, 550lb. Cubic measurement, 6ft.			
No. 9 Machine, with two sets of Chasers, for 2½in. to 8in. pipe, inclusive, R.H. ...	87	10	0
Extra Chasers, R. or L., six per set	2	0	0
Weight, 550lb. Export shipping weight, 700lb. Cubic measurement, 8ft.			
No. 11 Machine, with three sets of Chasers, for 4in. to 12in. pipe, inclusive, R.H....	225	0	0
Extra Chasers, R. or L., eight per set	4	10	0
Weight, 1,500lb. Export shipping weight, 1,700lb. Cubic measurement, 9ft.			

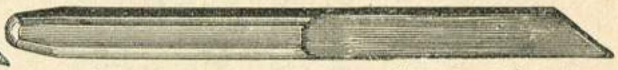
Lubricate the Chasers with Lard Oil.

Bricklayers', Masons', Plasterers', and Slaters' Tools.

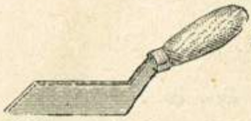
2276 Bricklayers' Bevels, Rosewood Handle with Brass Blade, 2/6 each.
2277 „ Bolsters, 1/9 each.
2278 „ Chalk Lines, 1d., 1½d, and 2d. per knot. Pins for ditto, Iron 4d., Steel 8d. and 10d. per pair.
2279 „ Chisels 8in. 8d., 10in. 10d., 12in. 1/-, 14in. 1/2, 16in. 1/4, 18in. 1/6 each. Stout ditto, 1/- per lb.

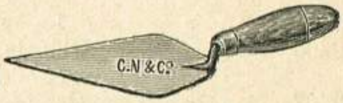

2281


2277


2280 Bricklayers' Plugging Chisels, 1/3 each.

2281 Bricklayers' Hammers, Handled, 2/- each.
2282 „ Club Hammers, Solid Steel, 8d. per lb.
2283 „ Scaffold Hammers, Improved Pattern, 3/- each.
2284 „ Scrutch Hammers, 2/- each.
2285 „ Improved Scrutch Hammers, Blades to fasten with Wedge, 2/- each. Extra Blades, 10d. each.
2286 „ Hod Sockets, 1/6 each.

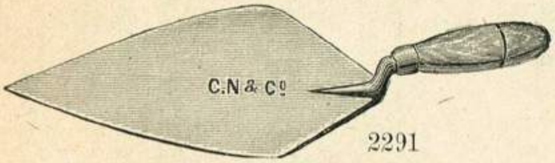

2287



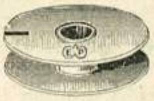
2293

2287 Bricklayers' Jointers, Short, 1/- each. Ditto, Long, 1/3 and 1/6 each.
2288 „ Mortar Larries, 2/- each.
2289 „ Mortar Hooks, 2/6 each.
2290 „ Plumb Bobs, Lead from 8oz. to 3lb., 7d. per lb.
2291 „ Trowels, 9in. 2/2, 10in. 2/4, 11in. 2/5, 12in. 2/6, 13in. 2/9 each.
2292 „ Ditto, Left-hand, 12in. 2/6, 13in. 2/9 each.
2293 „ Ditto, Pointing, 5in. 1/-, 5½in. 1/1, 6in. 1/3, 6½in. 1/4, 7in. 1/6, 8in. 1/10 each.

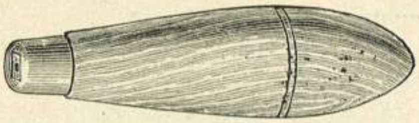
2278 Line Pins.



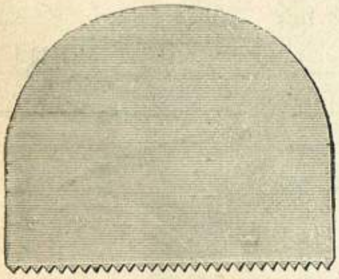
2291

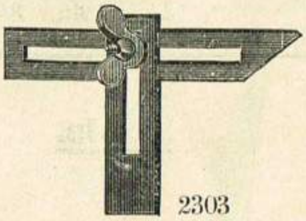

2294 Brass Chalk Line Reels, 6d. each.

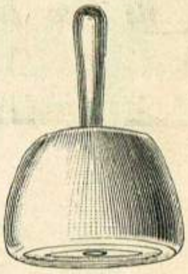
2282


Handles for No. 2293, 1½d. each.
„ „ „ 2291, 2d. „

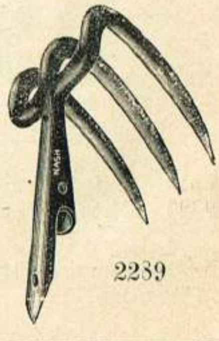
Masons' Tools.


2298 Masons' Drags.


2303

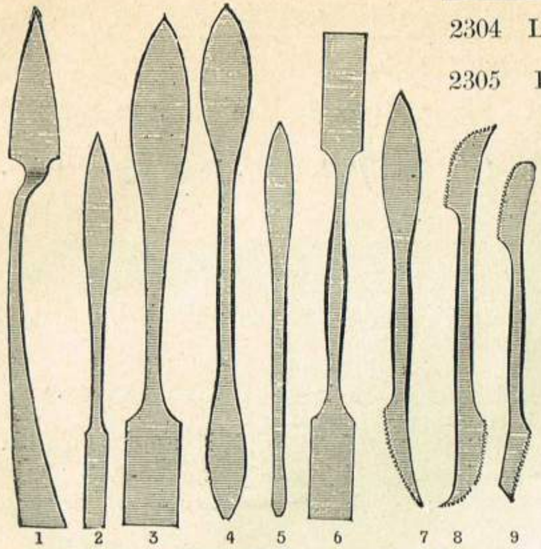

2302

2295 Best C. S. Mallet-head Chisels, Bolsters, Toolers, and Points, 9d. per lb.
2296 Hammer-head Chisels, Punches, and Pitchers, 9d. per lb.
2297 Mallet-head Claw Tools, 9d. per lb.
2298 Small Mallet-head Carving Chisels and Gouges, 6/- per doz.
2299 Cast Steel Masons' Hammer Heads, 8d. per lb.
2300 Masons' Drags, Fine, Middle, or Coarse, 1/- each.
2301 Cockscomb Drags, assorted shapes, 9d. each.
2302 Mason's Best Beech Mallets, 6in. 2/-, 6½in. 2/3, 7in. 2/9, 7½in. 3/3 each.
2303 Brass Shift Stocks, 6in. 1/6, 9in. 2/6, 12in. 3/-.


2289

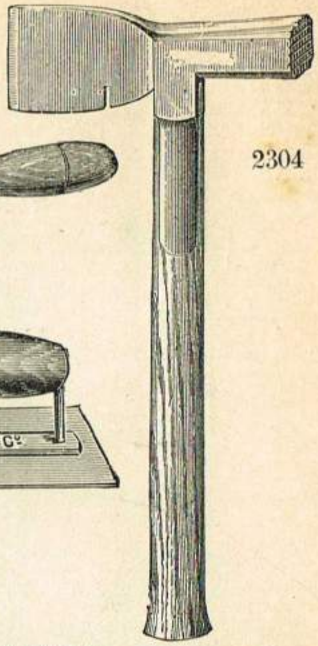
For Stone Saws, Steel Squares, etc., see Joiners' Section.

Plasterers' Tools.



2304 Lath Hammers—
Nos. 1 1/4, 2 1/6, 3 1/9.

2305 Best American Lath Hammers, 2/- and 2/3.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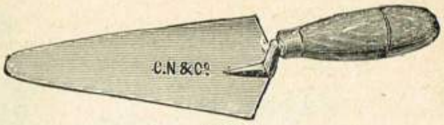

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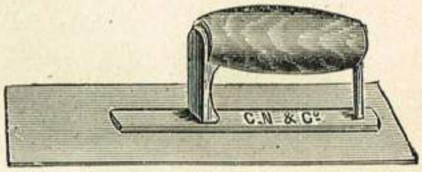


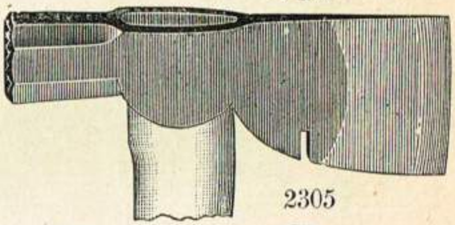
2309

2306 Plasterers' Small Tools, assorted patterns, 10d. each. Ditto Trowel Ended, 1/- each.

2307 Gauging Trowels, 6in. 1/6, 7in. 1/9, 8in. 2/-, 9in. 2/3, 10in. 2/6 each.

2308 Laying Trowels, Single Hang, 2/6 and 3/- each.

2309 Ditto ditto, Double Hang, 3/- each.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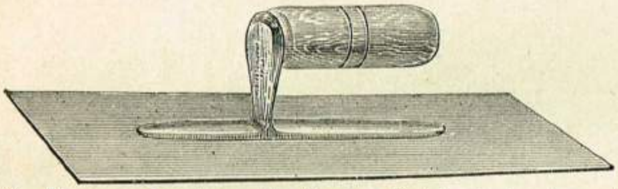


2310 Henry Disston & Son's Celebrated American Plastering Trowels, 4/- each.

2311 Henry Disston & Sons' Cheaper Qualities, 2/6 and 3/- each.

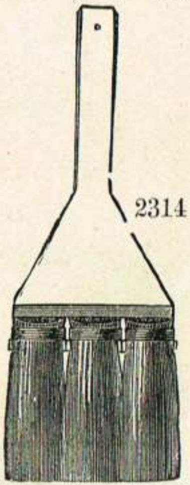
2312 Lath Renders, Knives, 8in. by 2¼in. blades, 2/6 each.

2314 Plasterers' 3 knot Copper Bound Stock Brushes.

	7	8	9oz.
Price	4/6	5/-	5/6 each.

2315 Nailed Stock Brushes, best quality, Metal Bound.

Size of Stock	5	5½	6	6½	7in.
Price	2/6	3/-	4/6	6/0	7/6 each.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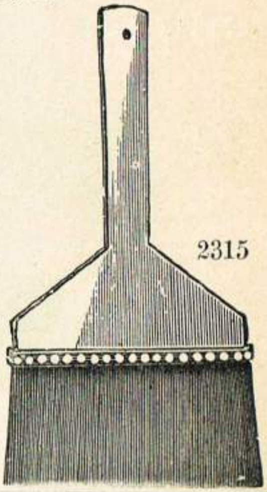
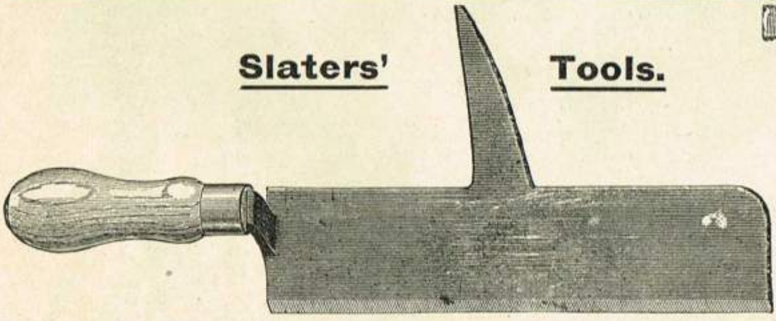

2315

2316 Joint Rules, 3in. to 18in., 1d. per inch.

2317 Steel Set Squares. 6in. 1/6, 12in. 3/- each.

2318 Plasterers' Servers, Nos. 1 1/3, 2 1/6.

Slaters' Tools.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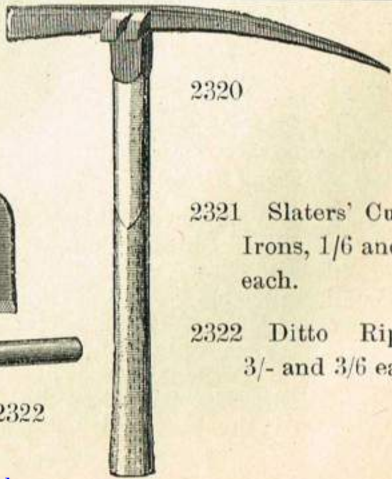
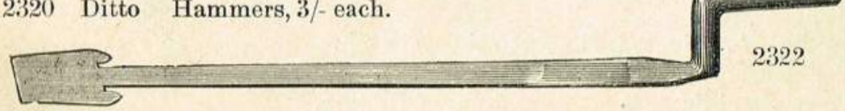

2320

2321 Slaters' Cutting Irons, 1/6 and 1/9 each.

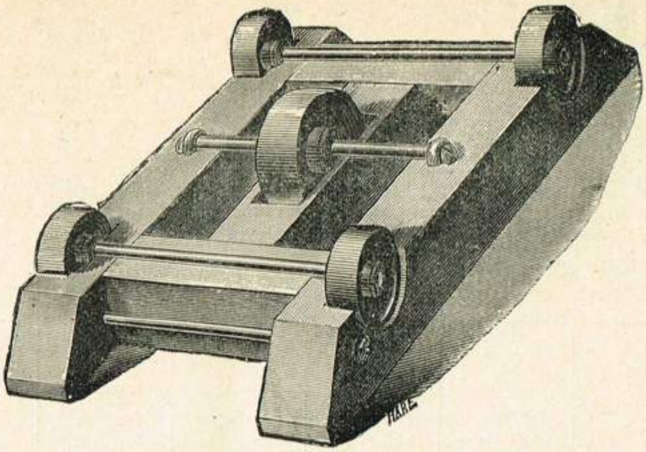
2322 Ditto Rippers, 3/- and 3/6 each.

2319 Slaters' Axes, 3/6 each.

2320 Ditto Hammers, 3/- each.


2322

The "Invicta" Wharf and Warehouse Truck.



2323 No. 2 "INVICTA" TRUCK (Reverse Side).

The "Invicta" Wharf and Warehouse Truck is a cheap, simple, strong and efficient improvement for removing heavy loads from place to place. By the adaptation of the centre rotating wheels the load is readily run and steered into any desired position.

No. 1, extra strong and thoroughly bolted together, mounted on six heavy iron wheels, with centre rotating wheels.

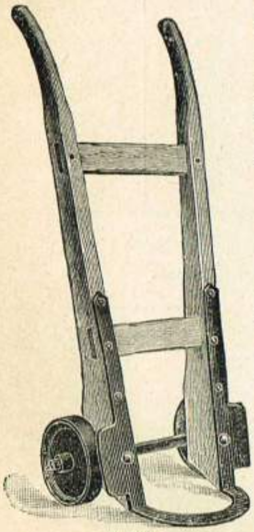
No. 2 has five iron wheels.

SIZES AND PRICES.

No. 1	36in. long by 24in. capacity, weight 50cwt.	£1 17 6
No. 2	22 ,, ,, 16 ,, ,, 30 ,, ...	0 16 0

Sack Trucks.

2324 **Lorry Pattern.**



2324

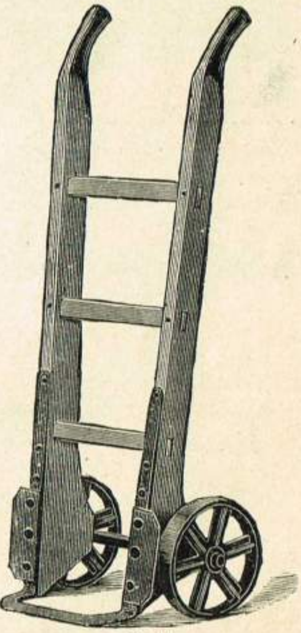
Length of Handles	3ft. 6ir.
Width of Foot Iron	11in.
Width at Upper Cross Bar	1ft. 2½in.
Length of Foot Iron	5in.
Diameter of Wheels	6¾in.
Size of Bore Wheels	¾in.
Weight	28lb.
PRICE	11/6

This Truck is designed for carrying on a lorry or waggon for handling sacks in loading and unloading. It is both light and strong, takes up little room, and is convenient to handle any size of sacks. The frame is pinned at the tenons, and the cross bars are shaped to hold sacks. The wheels are solid, strong and durable.

2325 **Manchester Pattern.**

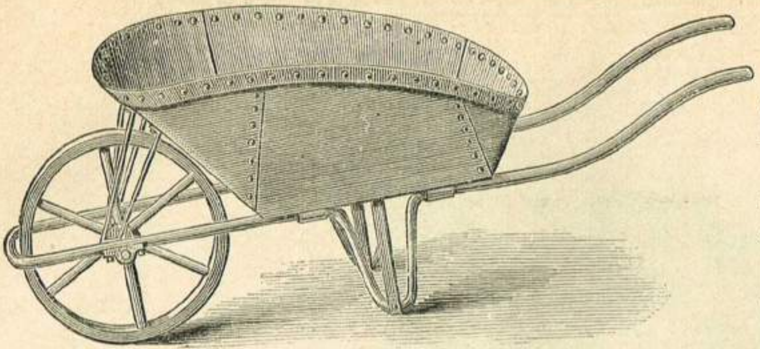
	No. 0.	No. 1.
Length of Handles	3ft. 7in.	4ft.
Width at Foot Irons	1ft.	1ft.
Width at Upper Cross Bar	1ft. 3in.	1ft. 4in.
Diameter of Wheels...	7½in.	9in.
Size of Bore in Wheels	⅞in.	⅞in.
Weight	30lb.	35lb.
PRICE...	12/6	18/6

This Truck is strong and substantially built, has riveted wheel guard, extra large wheels, and is equally convenient for boxes or bales. The No. 0 size has two cross bars, and an iron cross bolt.



2325

Single-wheeled Stokehole Barrows.



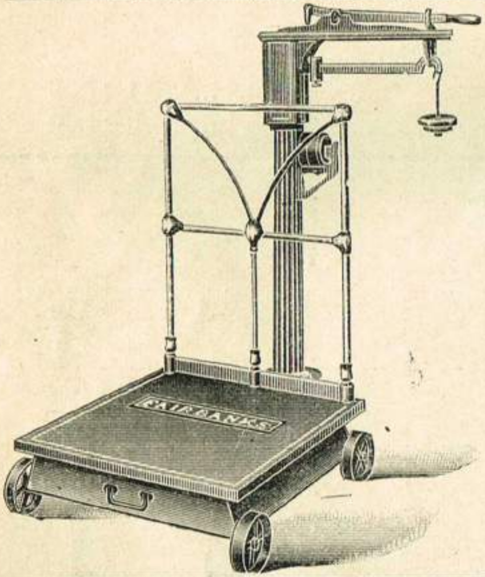
2327

In cases where Barrows cannot be used, we make Four-wheeled Tipping Boggies to suit requirements.

We also make special Barrows for Deck purposes—List and Prices on application.

Duplicate Bodies of all Barrows Supplied.

Size.	Steel Body.	Top.	Front.	Back.	Bottom.	Steel Wheel.	Extreme Height.	Weight.	PRICE.
21	14 W.G.	34in. long 26in. wide	19in. deep	9½in. deep	18in. long 18in. and 14in. wide	18in. diam.	27in.	116lb.	42/-
22	14 W.G.	30in. long 24in. wide	17in. deep	7in. deep	18in. long 18in. and 14in. wide	18in. diam.	25in.	104lb.	40/-



Weighing Machines.

2328

These Machines are well made, and their accuracy guaranteed.

No.	Capacity.	Size of Platform.	PRICE Without Back Rail.	PRICE With Back Rail.
1	3 cwt.	20in. by 22in.	88/-	98/-
2	4 "	22in. by 25in.	95/-	105/-
3	5 "	25in. by 25in.	112/-	125/-
4	7 "	30in. by 30in.	148/-	160/-
5	10 "	32in. by 32in.	170/-	185/-
6	12 "	34in. by 34in.	180/-	205/-
7	15 "	36in. by 36in.	210/-	230/-
8	20 "	38in. by 38in.	245/-	270/-

Sent with Back Rail unless otherwise ordered.

No Charge for Boxing or Packages.

Patent Pipe Clamp or Soldering Vice.

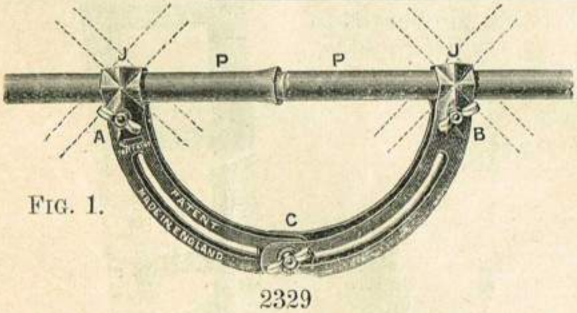


FIG. 1.

2329

PRICE.

Black finish, 9in. long, 4½in. wide (when closed up), complete with nuts, screws, etc., 3/6 each.

Indispensable to Plumbers and Gasfitters for jointing lead pipes.

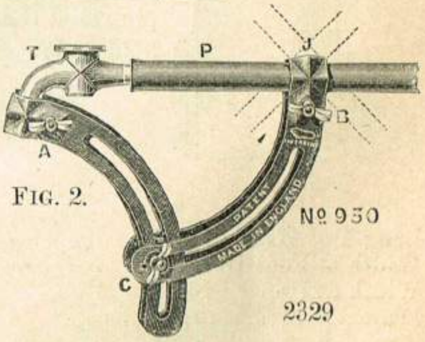


FIG. 2.

2329

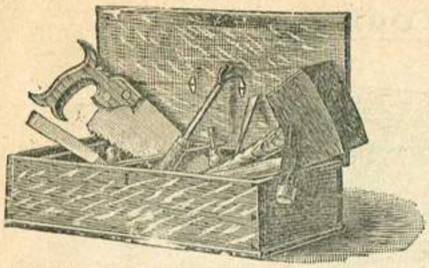
For Cycle Makers to hold parts whilst they are brazed together.

This extremely simple device consists of very few interchangeable parts, viz., 2 pairs of arms, 3 screws, nuts and washers, 2 large or central pivot washers.

The slots form the arc of a circle, the centre joint allows them to intersect one another at different angles, so that an infinite number of variations in position may be obtained—FIRSTLY: by putting together the centre joint **C**, so that the curves lie in one direction (Fig. 1). SECONDLY: by reversing the arms so that the curves cross one another (Fig. 2).

Each jaw is so formed that it will grasp an article by one end, or grasp it by the centre at three different angles (see dotted lines in illustrations). From this it will be seen that any person of ordinary ingenuity should **never be set fast to hold a job with it.**

Tool Chests.



2330 14 by 5½ by 3in. **No. 000.—Polished Oak, 11/6 each**

Hand Saw
Hammer
Mallet
Pincers
Bradawl
Gimlet
Chisel
Gouge
Turnscrew
Furniture, etc.

2331 15 by 7 by 3¼in. **No. 00.—Polished Oak, 14/6 each.**

Hand Saw
Hammer
Mallet
Pincers
Two Gimlets
Two Bradawls
Chisel
Gouge
Turnscrew
File
Rule
Furniture, etc.

2332 15½ by 8½ by 3½in. **No. 0.—Polished Oak, 20/- each.**

Hand Saw
Hammer
Mallet
Rule
Pincers
Two Gimlets
Two Bradawls
Chisel
Gouge
File
Marking Awl
Punch
Turnscrew
Square
Compasses
Furniture, etc.

2333 16½ by 9 by 4in. **No. 1.—Polished Oak, 24/6 each.**

Hand Saw
Hatchet
Hammer
Mallet
Rule
Pincers
Two Gimlets
Two Bradawls
Chisel
Gouge
Three Files
Oil Stone
Marking Awl
Punch
Turnscrew
Spokeshave
Square
Claw Wrench
Furniture, etc.

2334 17½ by 9½ by 4½in. **No. 2.—Polished Oak, 30/- each.**

Hand Saw
Hatchet
Hammer
Mallet
Rule
Pincers
Three Gimlets
Three Bradawls
Two Chisels
One Gouge
Three Files
Oil Stone
Marking Awl
Punch
Turnscrew
Spokeshave
Square
Claw Wrench
Pliers
Compasses
Furniture, etc.

2335 18½ by 10 by 5in. **No. 3.—Polished Oak, 37/6 each.**

Hand Saw
Hatchet
Hammer
Mallet
Rule
Pincers
Three Gimlets
Three Bradawls
Three Chisels
Two Gouges
Three Files
Oil Stone
Marking Awl
Punch
Two Turnscrews
Spokeshave
Square
Claw Wrench
Pliers
Compasses
Lock Saw
Plane
Furniture, etc.

2336 19½ by 11 by 7¾in. **No. 4.—Polished Oak, 50/- each.**

Hand Saw
Hatchet
Hammer
Mallet
Rule
Pincers
Four Gimlets
Four Bradawls
Four Chisels
Two Gouges
Three Files
Oil Stone
Marking Awl
Punch
Two Turnscrews
Spokeshave
Square
Claw Wrench
Pliers
Compasses
Lock Saw
Plane
Marking Gauge
Glue Pot & Brush
Furniture, etc.

2337 20½ by 11½ by 9in. **No. 5.—Polished Oak, 62/6 each.**

Hand Saw
Axe
Hammer
Mallet
Rule
Pincers
Five Gimlets
Five Bradawls
Five Chisels
Three Gouges
Four Files
Oil Stone
Marking Awl
Punch
Two Turnscrews
Spokeshave
Square
Claw Wrench
Pliers
Compasses
Lock Saw
Plane
Marking Gauge
Glue Pot & Brush
Drawing Knife
Cutting Punch
Scraper
Bevel
Furniture, etc.

2338 21½ by 12 by 9¾in. **No. 6.—Polished Oak, 72/6 each.**

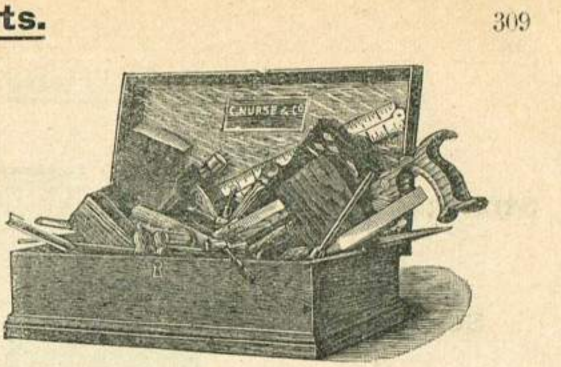
Two Saws
Axe
Two Hammers
Mallet
Rule
Pincers
Six Gimlets
Six Bradawls
Six Chisels
Four Gouges
Four Files
Oil Stone
Marking Awl
Two Punches
Three Turnscrews
Two Spokeshaves
Square
Claw Wrench
Pliers
Compasses
Lock Saw
Smooth Plane
Jack Plane
Marking Gauge
Glue Pot & Brush
Drawing Knife
Cutting Punch
Scraper
Bevel
Furniture, etc.

2339 22½ by 12½ by 10¼in. **No. 7.—Polished Oak, 85/- each.**

Three Saws
Axe
Two Hammers
Mallet
Rule
Pincers
Six Gimlets
Six Bradawls
Six Chisels
Four Gouges
Four Files
Oil Stone
Marking Awl
Two Punches
Three Turnscrews
Hand Vice
Two Spokeshaves
Square
Claw Wrench
Pliers
Compasses
Lock Saw
Smooth Plane
Jack Plane
Two Gauges
Glue Pot & Brush
Drawing Knife
Cutting Punch
Scraper
Bevel
Furniture, etc.

2340 23½ by 13 by 13in. **No. 8.—Polished Oak, 97/6 each.**

Three Saws
Axe
Two Hammers
Mallet
Rule
Pincers
Six Gimlets
Six Bradawls
Six Chisels
Four Gouges
Four Files
Oil Stone
Marking Awl
Three Punches
Three Turnscrews
Hand Vice
Two Spokeshaves
Square
Claw Wrench
Two Pairs Pliers
Compasses
Lock Saw
Smooth Plane
Jack Plane
Three Gauges
Glue Pot & Brush
Drawing Knife
Cutting Punch
Scraper
Bevel
Chalk Line Reel
Furniture, etc.



2341 24½ by 13½ by 13½in. **No. 9.—Polished Oak, 120/- each.**

Three Saws
Axe
Two Hammers
Mallet
Rule
Pincers
Six Gimlets
Six Bradawls
Six Chisels
Four Gouges
Five Files
Oil Stone
Marking Awl
Three Punches
Three Turnscrews
Hand Vice
Two Spokeshaves
Square
Claw Wrench
Two Pairs Pliers
Compasses
Lock Saw
Smooth Plane
Jack Plane
Three Gauges
Glue Pot & Brush
Drawing Knife
Cutting Punch
Scraper
Bevel
Chalk Line Reel
Two Mortice Chisels
Coach Wrench
Furniture, etc.

2342 25½ by 14 by 14½in. **No. 10.—Polished Oak, 150/- each.**

Three Saws
Axe
Three Hammers
Mallet
Rule
Pincers
Six Gimlets
Six Bradawls
Eight Chisels
Four Gouges
Six Files
Oil Stone
Marking Awl
Three Punches
Three Turnscrews
Hand Vice
Two Spokeshaves
Square
Claw Wrench
Two Pairs Pliers
Compasses
Lock Saw
Smooth Plane
Jack Plane
Three Gauges
Glue Pot & Brush
Drawing Knife
Cutting Punch
Bevel
Scraper
Coach Wrench
Chalk Line Reel
Brace, with 12 Bits
Cutting Nippers
Two Mortice Chisels
Furniture, etc.

Emigrants' Tool Chest, Fitted Up Complete with Tools of Warranted Quality.

2343 No. 1.—165/- each, Contains:

Best Axe
Best Carpenters' Adze
Carpenters' Hand Saw
Ditto Tenon Saw
Ditto Compass Saw
Jack Plane
One pair Grooving Planes
Rabbet Plane
Smooth Plane
Five Cast Steel Firmer Chisels
Three Cast Steel Firmer Gouges
Three Best Mortise Chisels, handled
Marking Awl
Brad Punch
Compasses
Carpenters' Pincers
Rule
Three Socket Chisels, handled
Plated Square
Three Augers, handled
Spokeshave
Two London Turnscrews
Marking Gauge
Improved Brass Slide Mortice Gauge
Best Brace, with 18 Bits
Bench and Roofing Hammer
Three Files, assorted
Six Cast Steel Gimlets
Six Bradawls
Carpenters' Mallet
Boxed Whetstone
Glue Pot and Brush
Pliers
Chalk Line Reel
Coach Wrench

2344 No. 2.—245/- each, Contains:

Best Axe
Best Carpenters' Adze
Carpenters' Hand Saw
Ditto Tenon Saw
Ditto Compass Saw
Jack Plane
Smooth Plane
Trying Plane
One pair Grooving Planes
Rabbet Plane
Bead Plane
Moving Fillister Plane
Brass Slide Mortice Gauge
Glue Pot and Brush
Pliers
Best Brace, with 24 Bits
Six Cast Steel Gimlets
Six Bradawls
Coach Wrench
Two Bench Hammers
Bench Vice
Three London Turnscrews
Six Cast Steel Firmer Chisels
Four Cast Steel Firmer Gouges
Three Best Mortice Chisels, handled
Four Socket Chisels, handled
Plated Square
Spokeshave
Drawing Knife
Four Augers, handled
Marking Gauge
Roofing Hammer
Compasses
Five Files, assorted
Carpenters' Mallet
Spring Oil Can
Marking Awl
Brad Punch
Chalk Line Reel
Carpenters' Pincers
Boxed Whetstone
Rule

2345 No. 3.—330/- each, Contains:

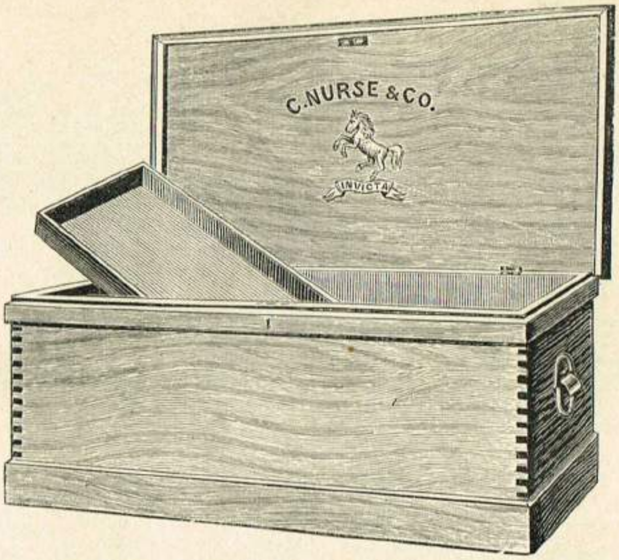
Best Axe
Best Carpenters' Adze
Carpenters' Hand Saw
Ditto Tenon Saw
Ditto Compass Saw
Jack Plane
Three Mortise Chisels
Twelve Cast Steel Firmer Chisels
Six Cast Steel Firmer Gouges
Five Socket Chisels
Two Plated Squares
Two Spokeshaves
Drawing Knife
Six Augers, handled
Three London Turnscrews
Marking Gauge
Improved Brass Slide Mortice Gauge
Cutting Gauge
Best Brace, with 30 Bits
Eight Gimlets
Eight Bradawls
Smooth Plane
Rule
Turning Saw and Frame
Trying Plane
Two Pairs Grooving Planes
Rabbet Plane
Plough, with Six Bits
Moving Fillister
Coach Wrench
Two Bead Planes
Saw Pad and Saw
Two Bench Hammers
Roofing Hammer
Seven Files, assorted
Cutting Nippers
Two pairs Carpenters' Pincers
Bell Hangers' Pliers
Two pairs Compasses
Two pairs Pliers
Chalk Line Reel
Glue Pot and Brush
Carpenters' Mallet
Boxed Whetstone
Spring Oil Can
Marking Awl
Brad Punch
Hand Vice
Bench Vice
Measuring Tape

"Invicta" Empty Model Tool Chests.

Strongly Made of Selected Timber.

Filled and Varnished.

Each Chest has one or two trays and a lock and key.



We recommend these empty chests and a selection of Tools to meet each customer's individual requirements in preference to ready-filled chests such as Nos. 2330 to 2345.

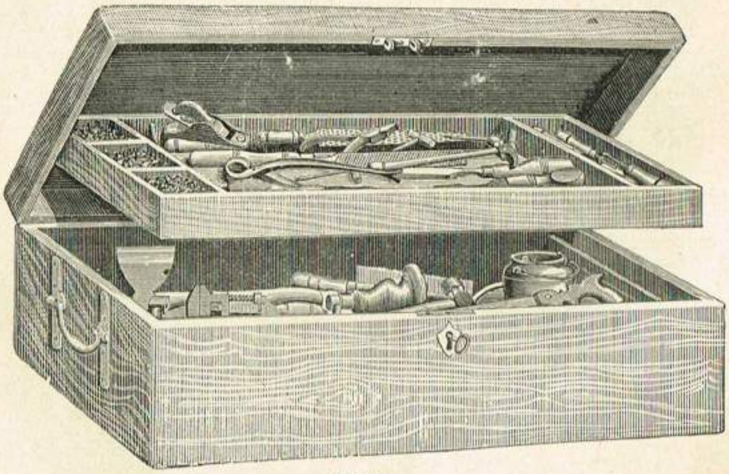
NOS. 2346 TO 2353 INSIDE MEASUREMENTS.

2346 14 by 6½ by 5in., with movable tray. Price 10/6 each.
2347 16 by 7½ by 5½in., with movable tray. Price 12/- each.
2348 18 by 8½ by 6½in., with movable tray. Price 13/6 each.
2349 21 by 10½ by 8½in., with two sliding trays. Price 16/- each.
2350 25 by 12½ by 9½in., with two sliding trays. Price 18/6 each.
2351 28 by 15 by 14in., with two sliding trays, saw rack, etc. Price 27/6 each.
2352 30½ by 15 by 14in., with two sliding trays and a saw rack. This chest will take a 26in. hand saw. Price 33/6 each.
2353 32 by 18 by 16in., with two sliding trays, having saw racks to take in full length saws. Price 40/- each.

The "Invicta" Oak Tool Chest.

CONTAINS—

- C.S. Hand Saw
- Strong Riveting Hammer.
- Light Tack Hammer
- Two-foot Rule
- Nail Pincers
- Small Axe
- 3 Gimlets
- 2 Handled Chisels
- 4 Handled Brad-awls
- Handled three-square File
- Handled Wood Rasp
- 2 Screwdrivers
- Pair of Pliers
- Do. Cutting Pliers
- Smooth Plane
- Glue Pot and Brush
- Oil Can
- Brace and Bits
- Small Back Saw
- Screw Wrench
- Oil-stone
- Nails, Screws, &c.



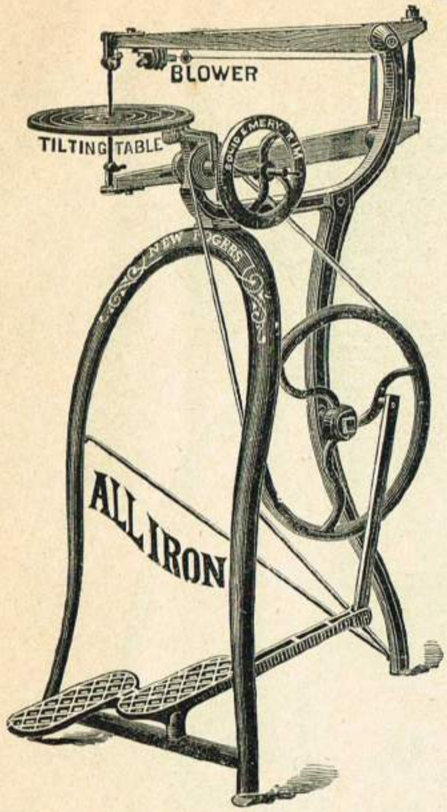
2354

Price, complete ... ... 55/- each.

This is a decided improvement upon the ordinary Gent's Tool Chest, being much neater, stronger, and more compact. It is fitted up with a loose Tray instead of a drawer, which can be lifted out instantly, by which means the Tools are got at more readily, the light tools being kept in the Tray, and the heavier ones at the bottom of the Chest. Size of Chest, 19 by 10½ by 6¾in.

2355 The "Invicta" Painted Deal Chest (fitted as above) 42/6 each.

Fretwork Machines.



2356 Price of No. 2 Rogers Saw, 17/6.

2357 Price of No. 1 Rogers Saw, with Balance of *Iron* instead of *Emery*, and with *Tilting Table Japanned*, instead of Nickel-plated, 15/- each.

The New Rogers Saw.

The latest improvements on this Saw are Pratt's Rubber Positive Blower, a new Clamp for holding the Saw Blades, and a roller inserted in the Table Back of the Saw, which makes it run perfectly true.

This season we have added all the improvements that our ingenuity can suggest, and have no hesitancy in declaring our New Rogers to be the Best Cheap Saw offered to the public.

The entire framework is made from iron, painted and japanned black, and ornamented with red and gilt stripes.

The arbors, etc., are made of steel, and are carefully gauged and fitted to their bearings.

The Arms and Pitman are of the best *Selected Ash*.

All Parts made to Interchange.

While our Jig Saw possesses *every improvement* and *advantage claimed* for any other in the market, we further claim the following points of superiority, viz. :—

1. The *Bearings to the Arms* are carefully sized to bring them in perfect line. (This is a vital point in the construction of any Jig Saw.)

2. We provide each machine with a *Dust Blower*, which is a very *great advantage*.

3. Our machine has a *jointed* Stretcher Rod, which allows the operator to throw the upper arm out of the way when adjusting his work or saw. This joint also permits the machine to work much more freely than with a straight iron rod.

4. Our clamps have a *hinged jaw*, which overcomes the disagreeable raking overthrow of the blade, which is unavoidable when the saws are secured rigidly to the arms. Saw blades are not nearly so liable to break when clamps have this joint. Thus a *large percentage* of the *expense* of running the saw is saved. Besides this, the saw runs *much easier*, the swing coming at the *hinge* instead of bending the blade at each stroke of the saw.

5. The Balance Wheel is 4½in. in diameter, with a handsome spoke centre, and a *Rim of solid Emery* (No. 70) ⅝ by ¾in.

6. Our attachment for *Drilling* is on the *Right Hand* side of the machine, which, for convenience, is an obvious advantage.

7. We use *no Pins* in the construction of our machine, but prefer the durability of nicely fitted *screws* and *bolts* in securing each part.

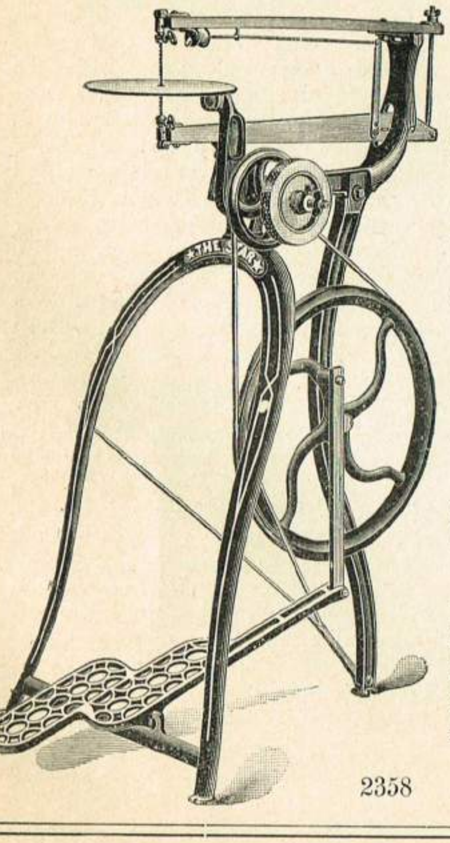
8. Each machine is *set up* and *run* and *carefully inspected* before leaving our works. It is then taken down and shipped in boxes.

These points of superiority are neither possessed by nor claimed for any other Cheap Saw.

Our Saw is provided with a *polished Tilting Table*, heavily Nickel-plated.

While the New Rogers Saw is very rich, though not gaudy in appearance, it has been more especially our object to make, for the least possible money, a Saw characterised for its Compactness, Strength, and Durability, ease of action, and firmness when in operation.

With each machine we give 12 Saw Blades, Wrench, Sheet of Designs, and Three Drill Points. The Saw alone weighs 25lb.; Saw and Box together 42lb.



2358

The Star Scroll Saw.

Our attention having been called to the demand for a Machine of a little higher grade than the Rogers Saw, we now offer the Star to meet this want. The peculiar advantages of the Star over the Rogers may be summed up as follows :—

1. In method of hanging the Arms, giving them free and easy movement.

2. In adjustment of Arms so that they may be kept parallel with each other.

3. Heavier Drive Wheel for heavier work.

4. Two Balance Wheels, one each Iron and Emery, the extra weight of additional Wheel giving steadiness to the motion.

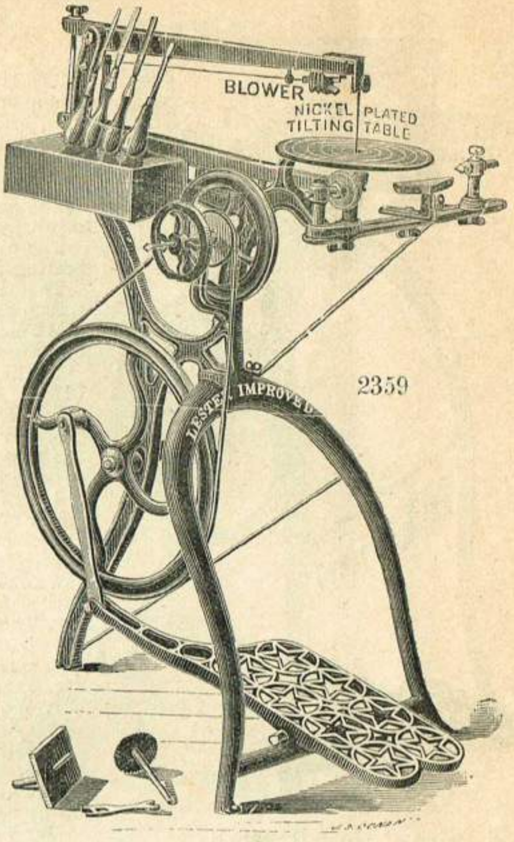
5. A Chuck for holding Drill Points.

6. The Emery Wheel is fastened by adjustable Clamps, which can also be used for holding various other sizes of Emery Wheels, Grindstones, Buffing Wheels, etc.

To adjust the Arms all that is necessary is to loosen the Bolt which goes through the Upper Arm in front of casting, and crowd the Arm sideways either to right or left, and into line with the lower one ; the hole in casting is elongated to permit of change in position as described. The Table is nickled, and the general finish of the Saw same as other Machines made by ourselves. It weighs, nett, 37lb., and boxed, 55lb.

Price 21/- each.

Lester Improved Saw.



2359

The Lester Saw is made of iron and steel, except the Pitman and Arms, which are ash. The Ironwork is nicely japanned black, with stripes of red and gilt. The Woodwork is varnished, bringing out the beautiful grain of the ash.

The Driving-Wheel is 15in. in diameter, and weighs 13lb. The treadle is made of iron, from a new and handsome pattern.

The Scroll Sawing Attachment is provided with a Tilting Table for Inlaid Work, the arms swinging 18in. in the clear; a Dust Blower which works automatically; a Roller inserted in the Table back of the Saw, which makes it run perfectly true. The Clamps will hold the coarsest or finest saw perfectly, while they are made adjustable to the right or left, or backwards and forwards, so that the blade may be kept in line. This saw will cut lumber from $\frac{1}{16}$in. to $\frac{1}{2}$in. in thickness.

The Circular Saw Attachment consists of a Saw 3in. in diameter, and an Iron Table 3 by $4\frac{1}{2}$in. This saw will cut lumber up to $\frac{1}{2}$in.

The Machine is also furnished with a Solid Emery Wheel and Drilling Attachment, accompanied by six best Stubbs' Steel Drills of assorted sizes.

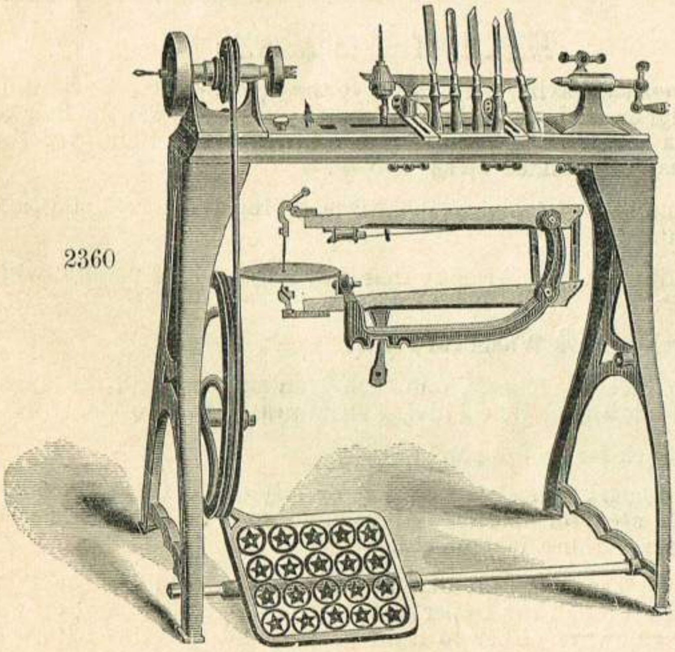
The Lathe Attachment is provided with iron ways and rests, steel centres, and three Fine Steel Turning Tools. Length of bed, 15in.; distance between centres, 9in.; swing, 3in.; length of side rest, 4in.

The following parts are supplied with each machine, viz., six Saw Blades, one Wrench, Screwdriver, two Sheets of Designs, and a nice box for the small tools.

This machine is adapted alike to the use of either amateurs or mechanics, and will be found very convenient in pattern-making. When shipped it is taken apart and packed in a box, but can easily be set up by following the directions accompanying each machine.

Price for the above, with Nickel-plated Table and Saw Guide, **£2 2s. 6d.**

Goodell Lathe and Saw.



2360

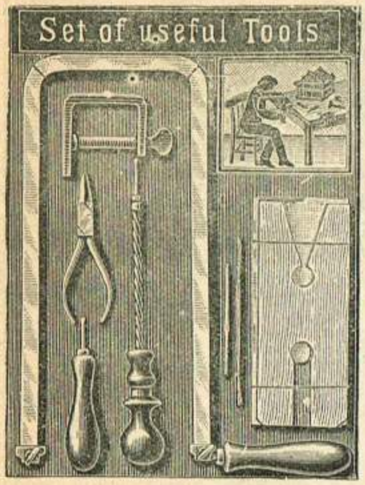
The large Driving Wheel of this Lathe has two grooves of varying depths on its face to give a change of speed, as the belt runs from it to the cone pulley on the lathe head. The higher speed is eleven to one, the lower seven to one. The lathe head is provided with a 2in. Face-plate, a Spur Centre, a Screw Centre for turning cups, and also with a very nice Drill Chuck to hold from $\frac{1}{32}$in. to $\frac{1}{4}$in. round twist drills for drilling wood or iron. It also has on the outer side of the pulley a $4\frac{1}{2}$in. by $\frac{7}{8}$in. solid Emery Wheel, and a Drill Spindle, with set screw to hold drill points for wood-drilling. The Tail-stock has a Screw Feed Centre, which is secured at any point desired by a clamping arrangement like that on the modern engine lathes. It is also provided with a long and short Tool Rest, five Turning Tools, Wrench, Drill Points, etc., etc. Swing of lathe, 5in.; length of bed, 24in.; distance between centres, $15\frac{1}{2}$in.

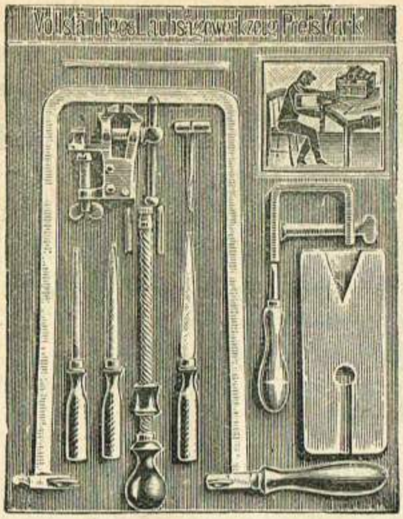
The Scroll Sawing Attachment, as seen in the Illustration, is secured to the lathe bed by one bolt, and can be put on and off at pleasure. This attachment has all the improvements found in any of our Scroll Saws.

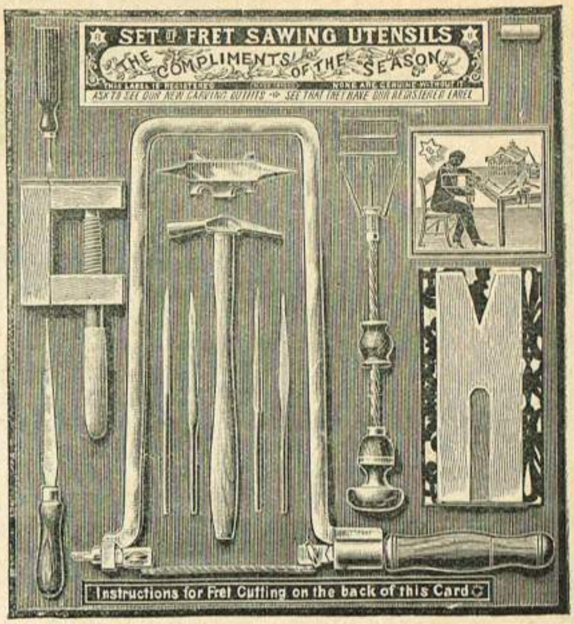
The Lathe is thoroughly built and highly finished, the planed and polished parts being Nickel-plated. Price of Lathe and Lathe Tools, complete with Scroll Saw Attachment, in Case, **£2 10s.**

N.B.—The Goodell Lathe and Fretsaw (No. 2360) will be found the better value machine of the two, especially as regards the strength of the Lathe.

Fretwork Outfits and Wood, etc.






SET OF FRET SAWING UTENSILS
THE COMPLIMENTS OF THE SEASON
ASK TO SEE OUR NEW CARVING OUTFITS
SEE THAT THEY HAVE OUR REGISTERED LABEL
Instructions for Fret Cutting on the back of this Card

2361 Useful Fretwork Outfits, 1/6, 2/-, 2/6, 3/6, 5/-, 7/6 each. Very good value. Patterns brought up-to-date every season.

Fret Woods, etc.

2362 Our wood is well-seasoned, planed on both sides, and sand-papered. Thickness $\frac{3}{16}$in. Prices per sq.ft.—Cedar 6d., Chestnut 8d., Mahogany 5d., Bird's Eye Maple 8d., Oak 6d., Padouk 6d., Walnut 6d.

2363 Useful parcels of Fretwood, assorted woods, 2/6, 4/-, 5/-, 10/- each. We cannot always guarantee special sizes, but we will always do our best to supply as nearly as possible any size that may be wanted.

2364 Three-Ply Fretwood, sold in panels 48in. long by 18in. wide, Mahogany, Walnut, Cherry, Lacewood, Canary, White Maple, 3/-per panel.

2365 Patterns 1d., 2d., 3d. and 6d. per sheet.

2366 Pattern Books, containing 12 assorted Wall Brackets, 1/-.

2367 Ditto, containing 12 assorted designs, including Photo Frames, Pipe Racks, etc., 1/-.

2368 Ditto, containing 20 assorted large designs, 2/6.

2369 Pentagraphs, for enlarging and reducing designs, 1/-, 2/3 and 5/- each.

2370 Crayons for use with ditto, 2d. each.

2371 Cramps 6d., 9d. and 1/- each.

2372 Fretwork Files 2d. each. Six assorted patterns on card, 1/-.

Fret Saw Frames.

2373 Saw Frames, 12in., with Screw Jaws, 9d. each.

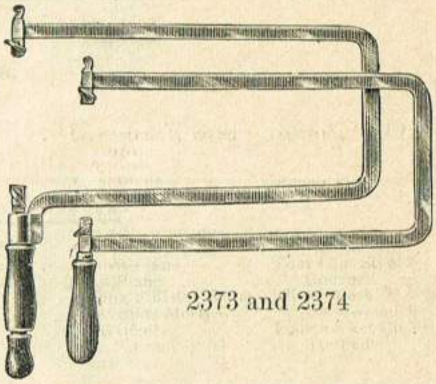
2374 Ditto, with adjustable Handle for Tightening Blades, 12in. 1/-, 14in. 1/3, 16in. 1/6.

2375 Best Quality ditto, 14in. 2/-, 16in., 2/3, 18in. 2/6.

2376 Best Quality ditto, with Polished Oval Steel Frame, with adjustable Handle and Top Screw, 14in. 3/-, 16in. 3/6, 18in. 4/-.

2377 Small Piercing Saw Frames, 1/-, 1/6, 2/- each.

2378 Improved Pattern ditto, 2/6 each.



2373 and 2374

Fret Saw Blades.

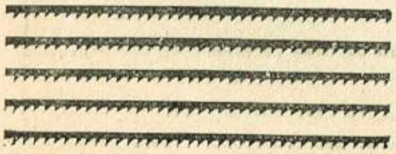
D.R.P. No 18812.
No 30
Für Holz & Horn.
D.R.P. No 18812.
No 30
Für Holz & Horn.

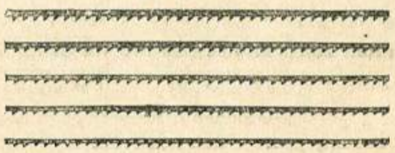
2379 Good Quality Fret Saw Blades, Nos. 0 to 6, 2d. per doz., 1/9 per gross.

2380 Best Quality Fret Saws for Metal, $3\frac{1}{2}$d. per doz., 3/3 per gross.

2381 The "Star" American Fret Saws, Nos. 0 to 6, $3\frac{1}{2}$d per doz., 3/3 per gross.

2381

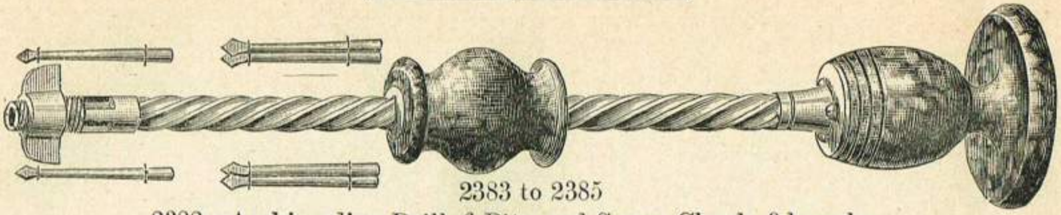




2381

Fretworkers' Tools, etc.

Archimedian Drills.



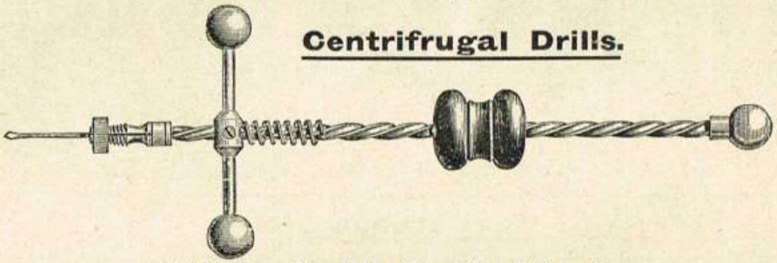
2383 to 2385

2382 . Archimedian Drill, 6 Bits, and Screw Chuck, 9d. each.
2383 „ Ditto Stronger, and with Fly Nut, 1/- and 1/3 each.
2384 Best Quality Ditto, 6in. 1/6, 8in. 2/-, 10in. 2/6, 12in. 3/- each.
2385 Extra Quality, with Forged Bar and with Brass Centre Handle (*not Wood* as Illustration), 8in. 3/-, 10in. 3/6, 12in. 4/- each.

Archimedian Drill Bits.

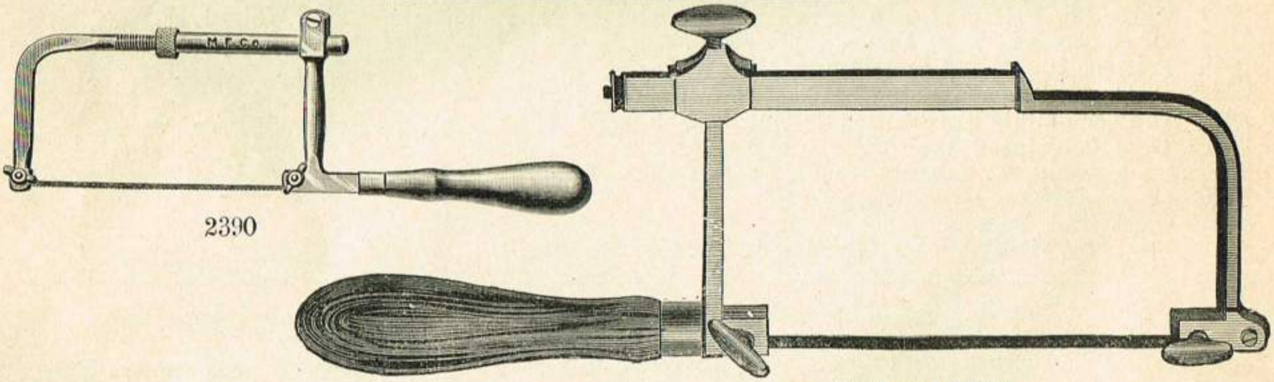
2386 Special Line, Assortment of 12 Drill Bits in Box, 8d. per Box.
2387 Boxes as above, with 24 Drills, 1/2 per Box.

Centrifrugal Drills.



2388 8in. 2/-, 10in. 3/-, 12in. 3/9 each.

Piercing Saw Frames.

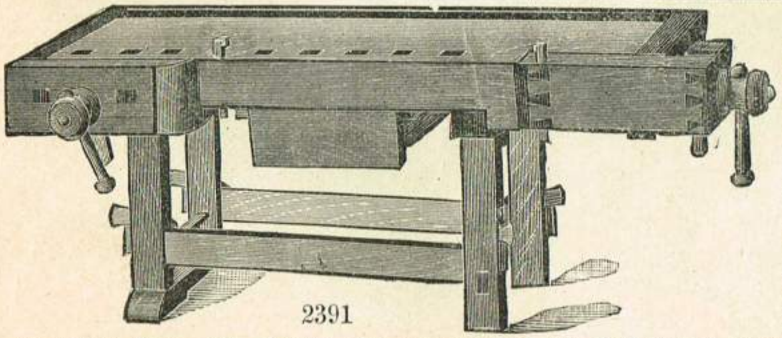


2390

2389 and 2389A

2389 Piercing Saw Frames, 1/-, 1/6 each. 2389A Best Quality Piercing Saw Frames, 2/-, 2/6 each.
2390 Improved Pattern Piercing Saw Frames, 3/6 each.

Improved Carpenters' Bench.



2391

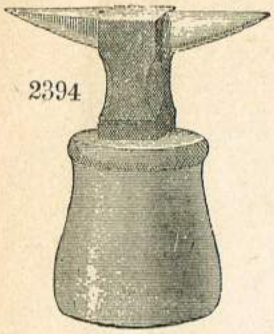
The following are a few of the advantages this Bench possesses, and which are a great improvement on any Amateur Carpenters' Bench hitherto introduced into the market. (1) While the common Bench possesses only Front Tangs, this Bench will be found to be fitted with Back Tangs also. These Back Tangs, through the medium of a Bench Screw, can be moved forward and backward, and will form part of the top when screwed up tightly, while otherwise an opening of any size can be made for the purpose of taking in blocks of wood to be smoothed down on surface and edges, and in this way the Back Tangs will act as a substitute for a Mitre. (2) Two Iron stops also belong to the above Bench, and a number of holes are cut into the top for one of these Stops to be shifted to any convenient place, and through the assistance of the Back Tangs, wherein the other Stop is placed, pieces of wood of any length and description can quickly be fixed in the Bench to be planed, the advantages of which at once recommend themselves. The Front Tangs also possess two Wooden Rails, which run in grooves parallel with the Bench Screw to regulate its motion and keep it steady, supplemented by an Iron Spindle which compels the Front Tangs to close firmly and evenly. There are in this Bench, in addition, a large and convenient Drawer and a Well.

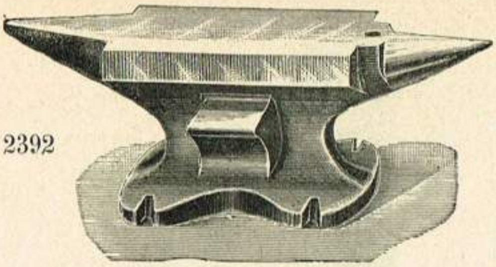
The Bench is made in the following lengths :—40in., 4ft., 5ft., 6ft., and 7ft.

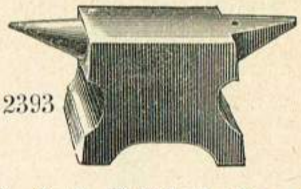
40ins., £2. 4ft., £2 8s. 5ft., £2 15s. 6ft., £3 12s. 6d. 7ft., £4 14s.

Nett and Carriage Forward.

Watch and Clock Tools and Sundries.





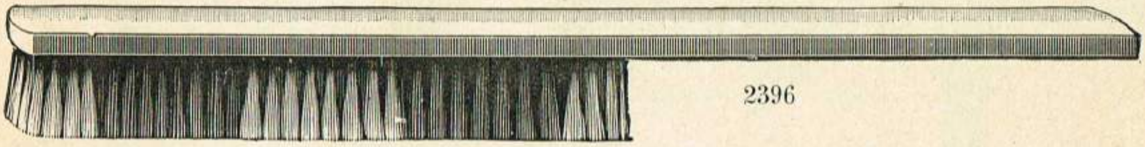


2393 Best Polished Top Cast Steel Anvils, 1lb. 2/6, 2lb. 4/-, 3lb. 5/6 each.

2392 Bessemer Steel Anvils, 1lb. 1/3, 2lb. 2/6 each.

2394 Anvils, or Beck Irons, Mounted on Wood Stand, 2/6 each.

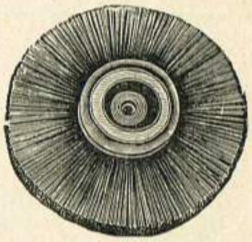
2395 Improved Blow Pipes, 4d., 6d., 9d., 1/- each.



2396 Watch, Clock, and Plate Brushes—Soft, Medium, or Medium Hard, 6d., 9d., 1/- each.

2397 Circular Polishing Brushes for Lathe, Best Quality, Real Bristles :

Diameter	3	4 Rows.
2¾in.	9d.	1/- each.
3¼in.	1/-	1/3 „
4in.	1/3	1/6 „



2398 Circular Scratch Brushes for Lathe, Brass Wire, Best Quality :

	Diameter	3	4 Rows
Coarse Wire	3½in.	1/3	1/6 each.
Fine Wire	3½in.	1/6	2/- „
Do. Steel	4in.	2/-	2/6 „

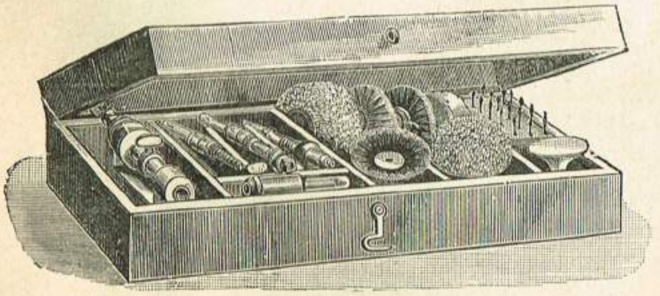
2399 Circular Solid Felt Buffs—

Diameter	1⅛	1¼	1⅜	1½	1⅞	2⅛in.
Thickness	⅜	½	½	⅝	¾	11/16in.
PRICE	3d.	5d.	6d.	8d.	1/-	1/3 each.

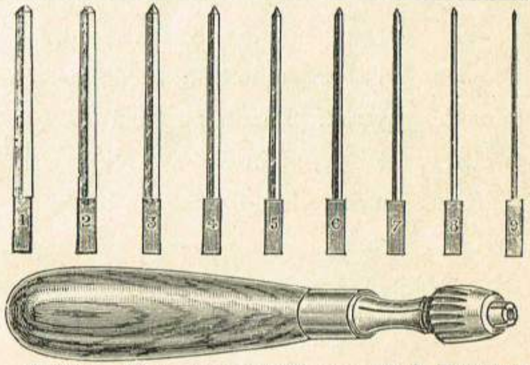
2400 Circular Felt Rim Buffs with Wood Centres—

Diameter	1¾	2	2¼	2⅜	2¾	3⅛	3½	4in.
PRICE	5d.	8d.	10d.	1/2	1/9	2/3	3/-	3/6 each.

Handy Polishing Outfit.



2401 The Handy Polishing Outfit for small articles such as Watch Cases, etc., with set of Buffs, Brushes, Emery Wheel, set of Drills and Chucks to carry same. Complete, in wood box, 12/6.



2402A The "Invicta" set of 9 English Broaches, Gradual Taper, graduating 1/16in. to 3/16in., with Universal handle, 4/6 per set.

2403 Best quality, full length English Broaches :

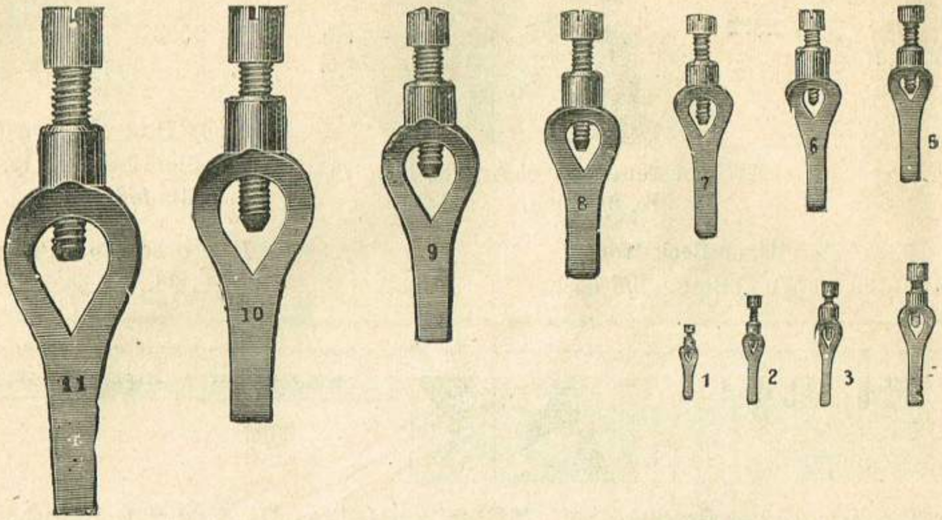
1/16	3/32	⅛	5/32	3/16	7/32	¼	5/16	⅜in.
2d.	2½d.	3d.	4d.	6d.	7d.	10d.	1/-	1/3 each.

Watch and Clock Tools and Sundries—*continued.*

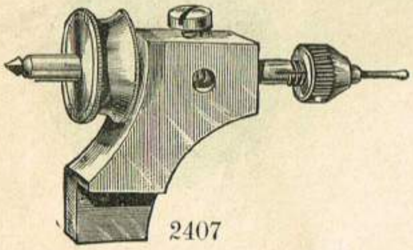
2403 Steel Burnishers, oval, 4in., straight or curved, Hard Wood Handles, 1/- each.

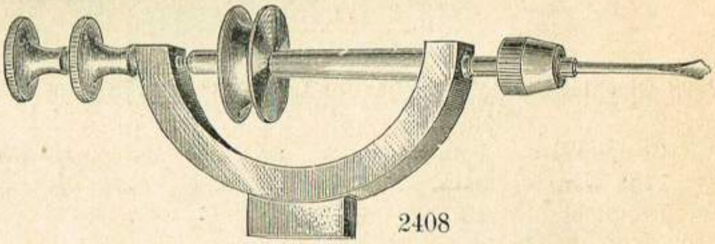
2404 Handled Steel Burnishers for Silversmiths, assorted patterns, 1/- each.

2405 Callipers, brass, with bar and screw, 6d. and 9d. each.



2406 Nickel-plated Steel Carriers, best make, No. 1 to 7, 8d. each; Nos. 7 to 9, 10d. each; Nos. 10 [illegible] 11, 1/- each; No. 12, 1/6 each.


2407


2408

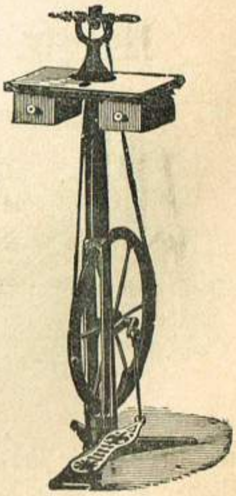
2407 Drillturn, brass "Standard" Chuck, brass ferrule and chamferer, used by bow, with 6 drills; made in 3 sizes. Illustration shows smallest size. Small 1/3, Medium 1/6, Large 2/-

2408 Drillturn, brass "Standard" Chuck, half-moon pattern, brass ferrule for bow, 6 drills. Small 1/6, Medium 1/9, Large 2/3.

2409 Drillturns, best quality, with Triple Pulley, 4/6 each.

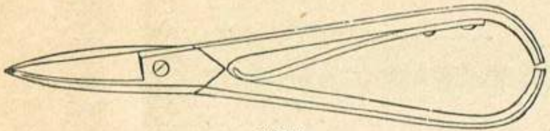
Lathe for polishing, with iron stand, foot wheel, and treadle, walnut top with 2 drawers. The wheel is 17in. in diameter and weighs 14lb.; the table is 38in. from the ground. It can be used for brushing clock plates, watch cases, and jewellery, for scratch brushing of every description, for grinding gravers, drills, &c., for sawing wood and metal, and for general drilling. A painted iron hood is provided, which partly encloses the brushes, to prevent splashing. The lathe is self contained, can be placed in any odd corner, and is an extremely useful auxiliary in any workshop.

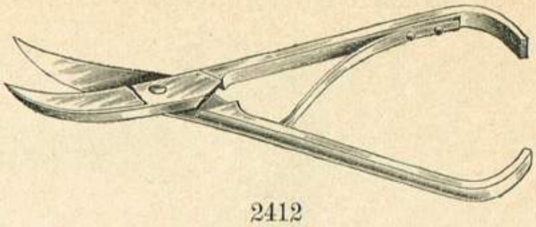
Price 47/6


2410

For various patterns of small Polishing Heads see pages 215 and 216.

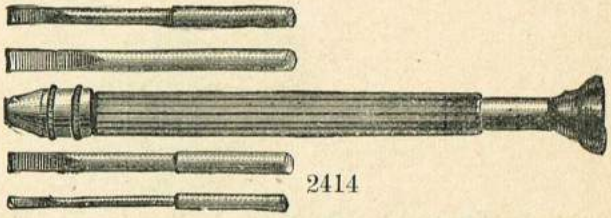
Watch and Clock Tools and Sundries—*continued.*


2411


2412

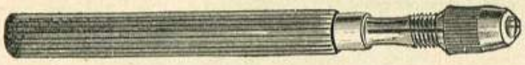
2411 7in. Best Light Straight Shears, 2/6 each ; Ditto if without springs, 2/-
2412 7in. Ditto, with Bent Points, 3/6 each ; Ditto, if without springs, 3/-

2413

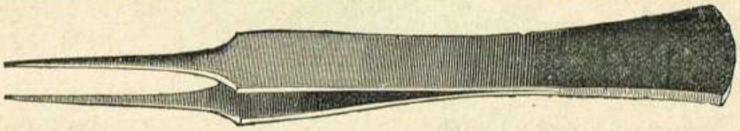

2414

2413 Screwdrivers, Watch, Ebony Handle, Revolving Top, 6d., 9d., 1/- each.

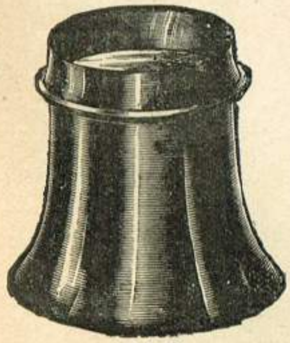
2414 Screwdriver, with American Chuck, Brass Body, with 4 Interchangeable Blades, 9d. each.


2416

2415 Vice, Pinvice, Solid Handle, Dog or Vice Nose, 1/6 each.
2416 Tongs, Pin Tongs, with "Standard" Chuck, Hollow Fluted Handle, 6d., 8d., 10d. each.
2417 Pin Tongs, Improved Spring Chuck and Rosewood Handle, 1/-, 1/3, 1/6 each.



2418 Tweezers, for Watchmakers, "M," Geneva pattern, fine or broad points, 6d., 9d., 1/- each.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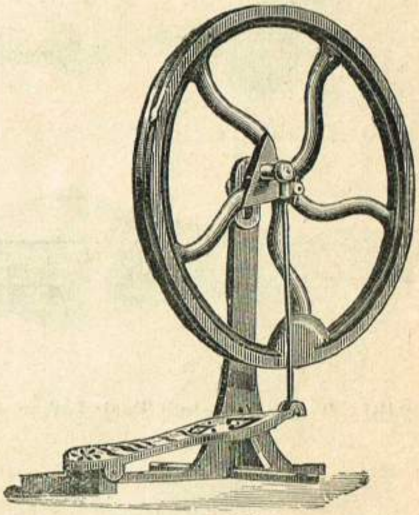
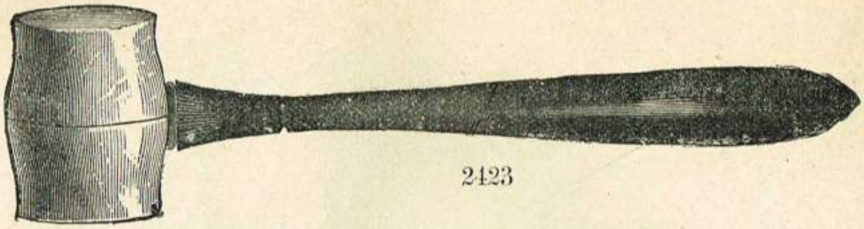
2420


2422

2419 Eye-glass, vulcanite, specially designed for lightness ; owing to the way the lens is fixed in, a large field of vision is obtained, 1/- each.
2420 Eye-glass, horn frame, achromatic double lenses, 1/3 each.
2421 Eye-glass, special line, horn frame, 6d. each.
2422 Lathe Foot Wheel, with treadle attached—diameter of wheel 17in., total weight 34lb., price 20/-

Watch and Clock Tools and Sundries—*continued.*

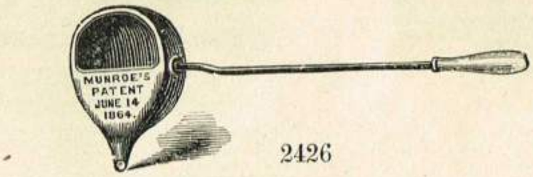
2423 Mallets, boxwood, with black handles screwed in, 9d. each.



2423

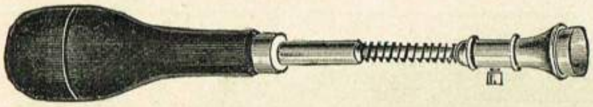
2424 Watch and Clock Oil, 6d. and 1/- bottle.

2425 Pegwood, 2d. per bundle.

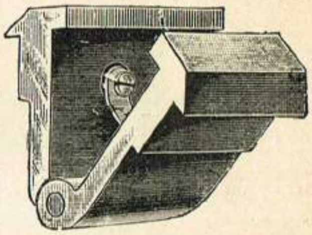


2426

2426 Self Skimming Soldering Ladles, 4ozs. 1/3, 1¼lb. 1/6 each.



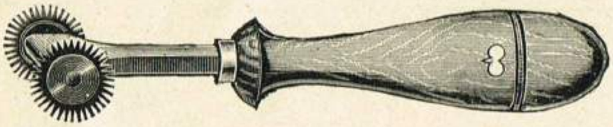
2427 Small size Centre Punch, Ebony Handle, with spring, 1/6 each.



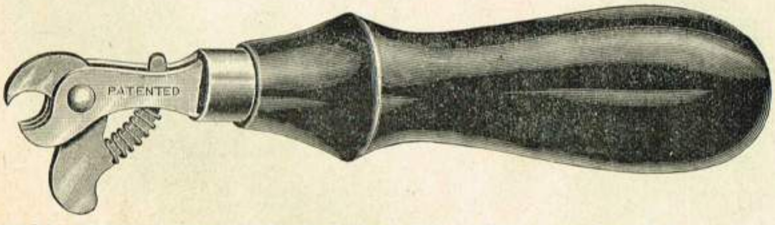
2428 Brass Vice Clamp, 1/- each.

Improved Parallel Ditto, Brass or Steel, 2/- each.

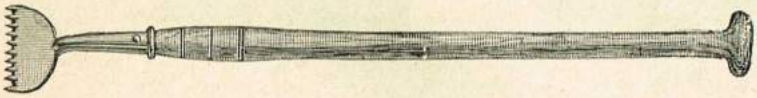
2429 Single Tracing Wheels, 6d. and 9d. each.



2430 Double Tracing Wheels, 1/- each.



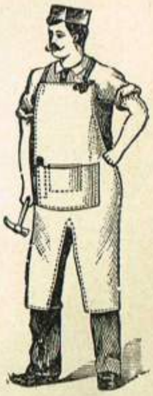
2431 The "Invicta" Tack Lifter, 6d. each; post free 8d.



2432 Handled Carpet Stretchers, 1/6 each.

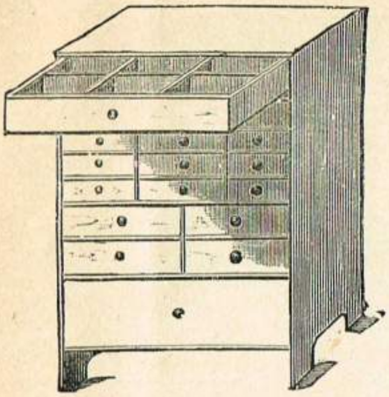
2433 Best Quality, Nickel-plated, Handled Carpet Strainers.

8	10	12 teeth.
4/-	4/6	5/- each.



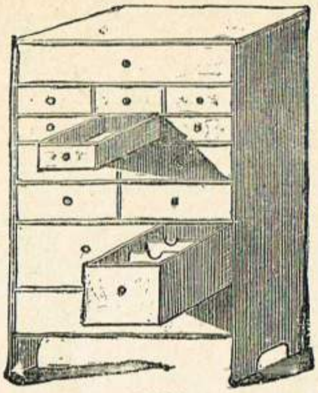
2434 Handy Apron; a very useful article suitable either for Mechanic or Amateur, 1/6 each; post free 1/9.

Chests of Drawers Suitable for Tools and Materials, etc.



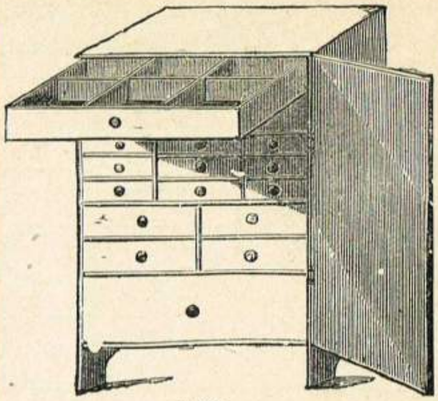
2435

Chest of 16 Drawers for Tools, deal, height 18in., width 12in., depth 9in. 9/-



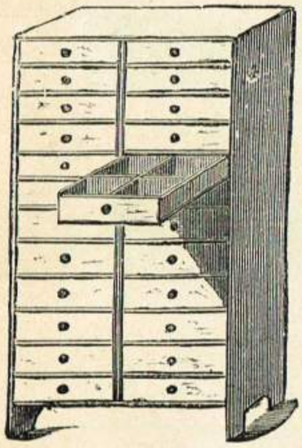
2436

Chest of 14 Drawers for Tools, deal, height 16in., width 12in., depth 11in. 8/6
Ditto, with 18 or 24 Drawers 10/6, 12/6



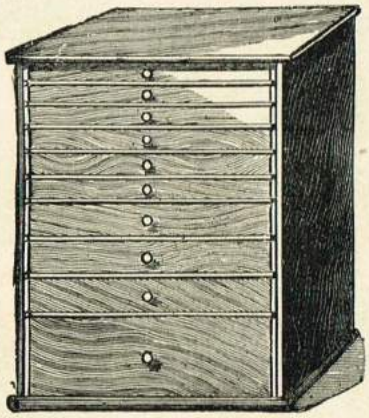
2437

Chest of 16 Drawers for Tools, deal, with door, height 18in., width 12in., depth 10in. 10/-
Ditto, if fitted with lock and key 12/6



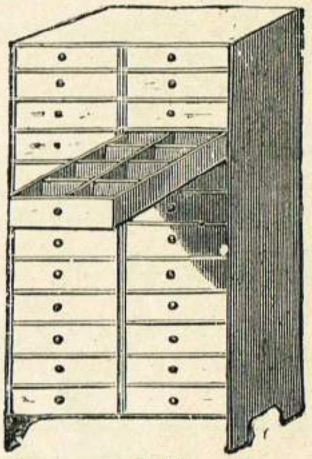
2438

Chest of 24 Drawers, height 25½in., width 12in., depth 7½in., deal 12/6



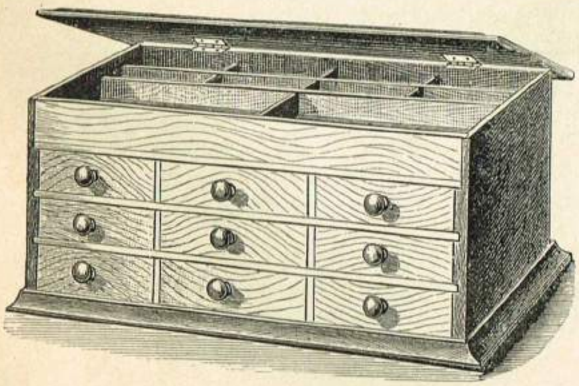
2439

Chest with 10 plain graduated drawers, with brass knobs, deal, London made, height 15in., width 12½in., depth 10½in. ... 16/6



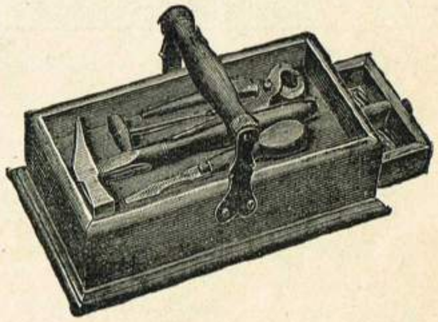
2440

Chest of 24 Drawers, height 25in., width 12in., depth 11in., deal 17/6



2441

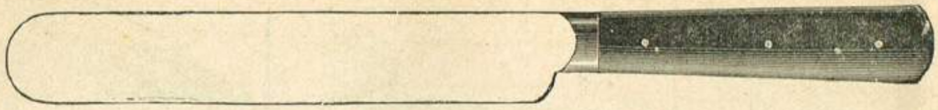
Nest of 9 Drawers, solid oak, with lid to open, height 4in., width 9in., depth 4½in.
Price 6/6



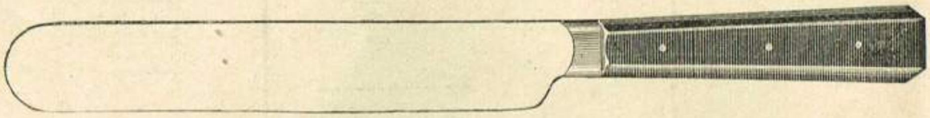
2442

Handy Tool Tray, with Hammer, Pincers, Screwdriver, Rule, Gimlet, and Bradawl.
Price 5/6

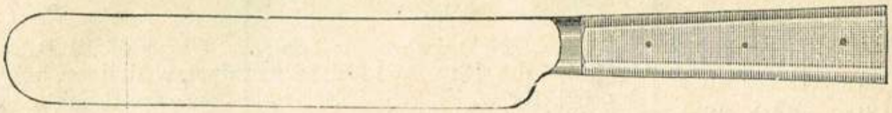
Table Cutlery.



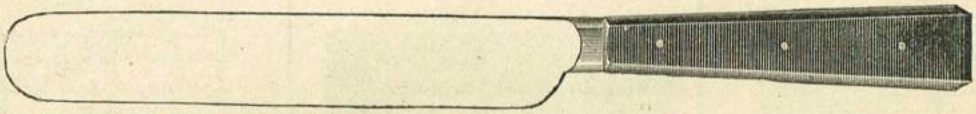
2443 White or Black Bone-handled Table Knives and Forks ... ... 4/6 half doz.



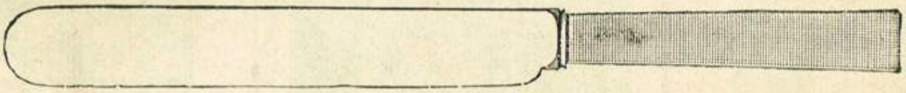
2444 Black-handled Table Knives and Forks ... ... 5/6 half doz.



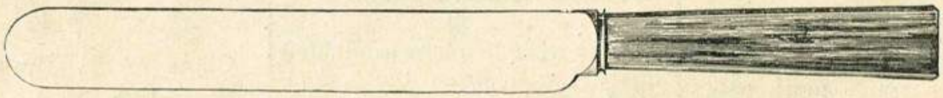
2445 White Bone-handled Table Knives and Forks ... ... 6/6 half doz.



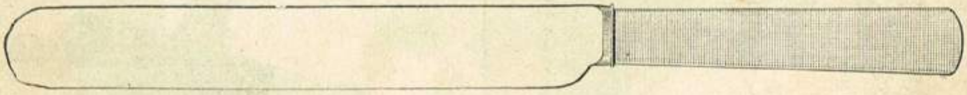
2446 Black-handled Table Knives and Forks ... ... 6/6 half doz.



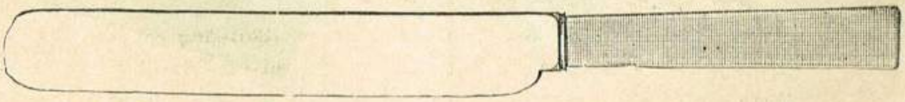
2447 Bone-handled Edge-pinned Table Knives and Forks ... ... 7/6 half doz.
2448 „ „ „ „ Dessert „ ... ... 6/6 „
2449 Carvers to match same, 3/6 per pair. Steels, 1/- each.



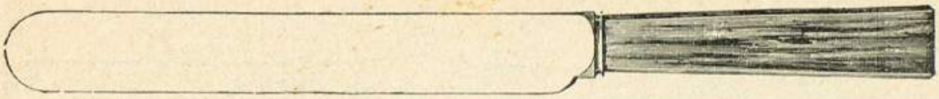
2450 Self Tip or Horn-handled Table Knives and Forks ... ... 10/- half doz.
2451 „ „ „ „ Dessert „ ... ... 9/- „
2452 Carvers to match same, 5/6 per pair. Steels, 1/6 each.



2453 Bone-handled Edge-pinned Table Knives ... ... 3/6 half doz.
2454 „ „ „ „ Dessert „ ... ... 3/- „

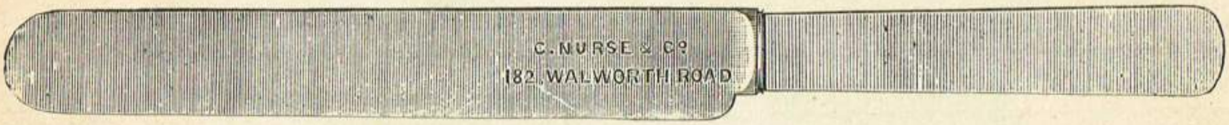


2455 Bone-handled Edge-pinned Table Knives ... ... 4/6 half doz.
2456 „ „ „ „ Dessert „ ... ... 4/- „
2457 Carvers to match same, 4/6 per pair. Steels, 1/3 each.

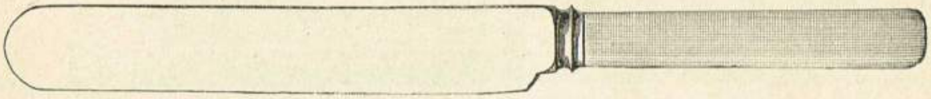


2458 Self Tip, or Horn-handled Table Knives ... ... 7/- half doz.
2459 ,, ,, ,, Dessert ,, ... 6/- ,,
2460 Carvers to match same, 5/6 per pair. Steels for ditto, 1/6 each.

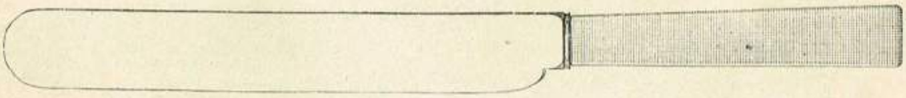
2461 Special Line—Xylonite or Ivoride-handled Table Knives ... ... 5/- half doz.
2462 ,, ,, ,, ,, ,, Dessert ,, ... 4/6 ,,
2463 Carvers to match same, 4/6 per pair. Steels, 1/6 each.



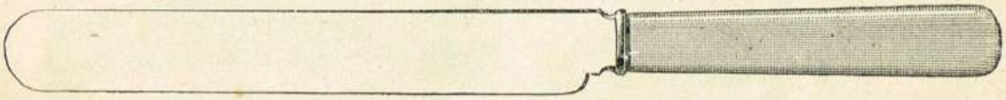
2464 Special Line—Best Xylonite or Ivoride-handled Table Knives, with very best Shear Steel Blades ... ... 7/6 half doz.
2465 Ditto Ditto Ditto Dessert Knives ... ... 6/6 ,,
2466 Carvers to match same, 6/6 per pair. Steels, 2/- each.



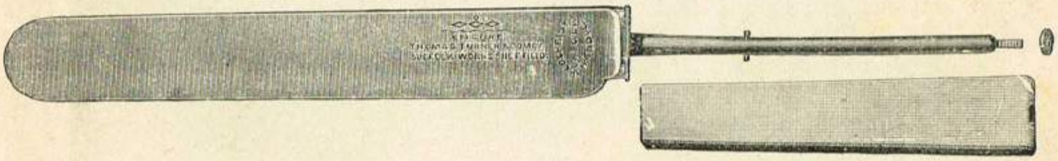
2467 Best Xylonite or Ivoride-handled Table Knives ... ... 8/6 half doz.
2468 ,, ,, ,, ,, Dessert ,, ... 7/6 ,,
2469 Carvers to match same, 7/6 per pair. Steels, 2/6 each.



2470 Ivory-handled Table Knives, 10/6 half doz. Ditto, Best Handles, 15/- half doz.
2471 ,, ,, Dessert ,, 8/6 ,, ,, ,, 12/- ,,
2472 Carvers to match same, 8/6 and 10/6 per pair. Steels, 3/- and 3/6 each.

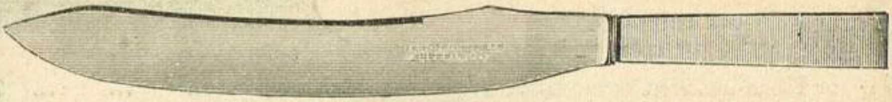


2473 Best Oval Ivory-handed Table Knives, with through Tangs ... ... 16/6 half doz.
2474 ,, ,, ,, Dessert ,, ,, ,, ,, ,, ,, 13/6 ,,
2475 Carvers to match, 11/- per pair. Steels, 3/6 each.

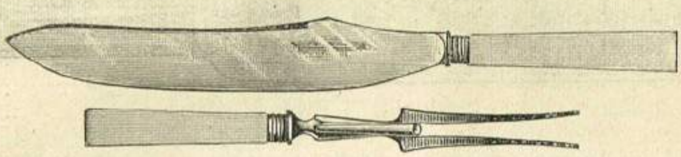


Best quality Ivory-handled Table Knives, with the Suffolk Lockfast Fastening, which ensures a perfectly secure handle.
2476 Table Knives, 21/- half doz. Desserts, 17/6 half doz.
2477 Carvers to match—Game, 12/6. Meat, 13/6 per pair. Steels, 5/- each.

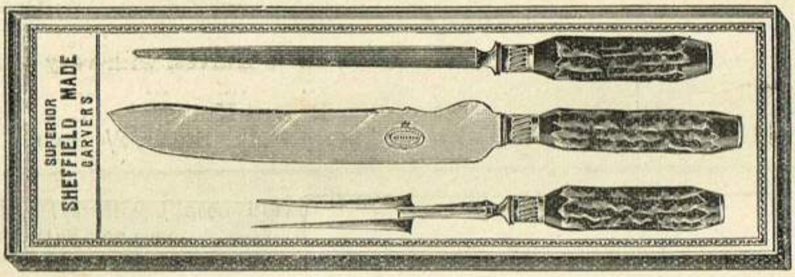
Best Quality Carvers.



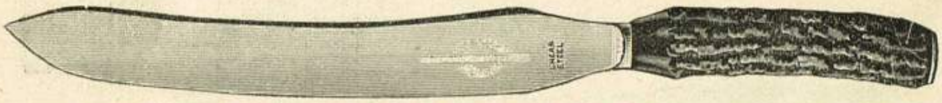
2478 9in. Blade, Ivoride Handles, very bold pattern.
3/6 per pair.



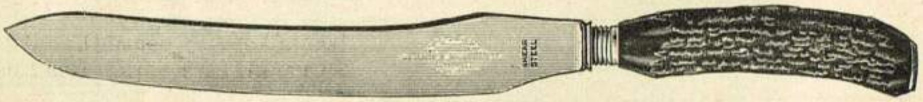
2479 9in. Blade, Ivoride Handles, Solid Silver Ferrules.
Special Line, 4/- per pair.



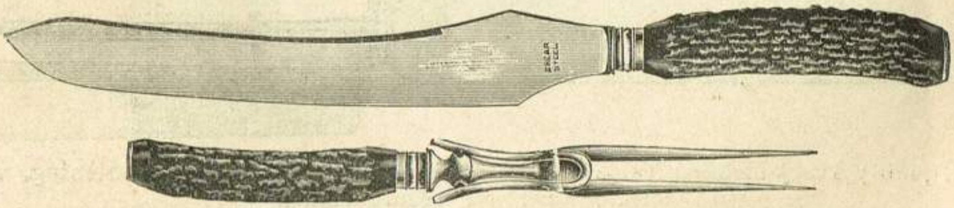
2480 9in. Blade, Imitation Stag Handles, Heavy German Silver Mounts,
Special Line, 5s. 6d. set of 3 pieces.



2481 9in. Best Shear Steel Blade, Hand-forged, Natural Stag Handles.
4/6 per pair.

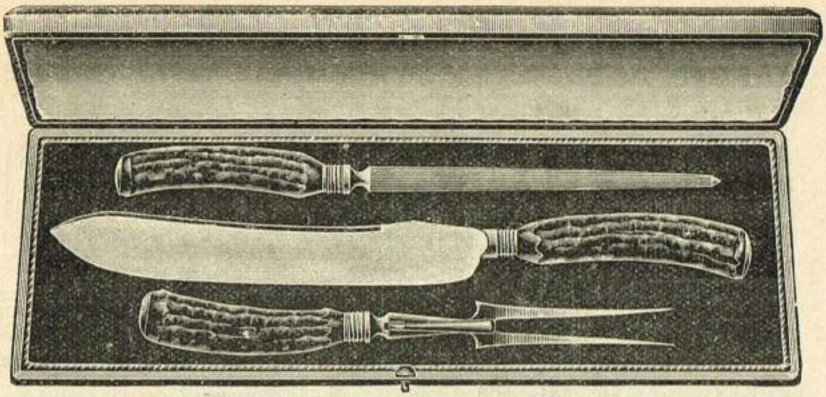


2482 9in. Best Shear Steel Blades, Hand-forged, Solid Silver Ferrules, Best Stag Handles.
6/6 per pair, or 8/6 set of 3, including Steel.

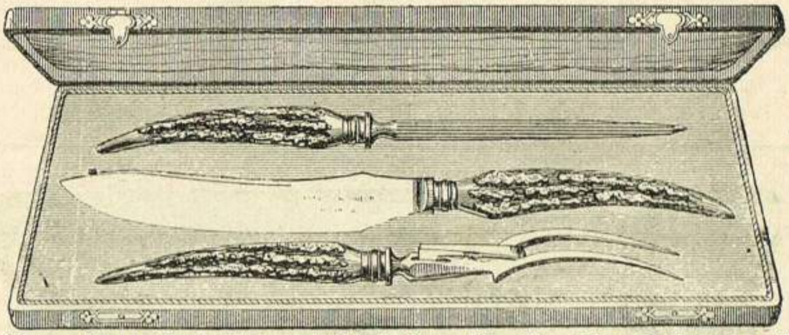


2483 9in. Best Shear Blades, Best Stag Handles, Heavy Nickel Mounts, Improved Fork Guard.
7/6 per pair, or 9/6 complete with Steel.

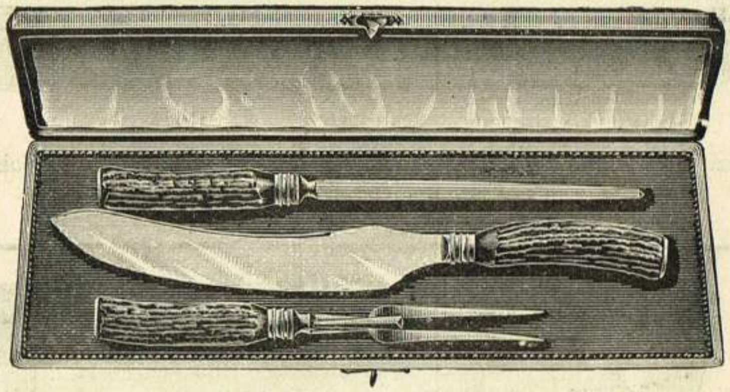
Cases of Carvers.



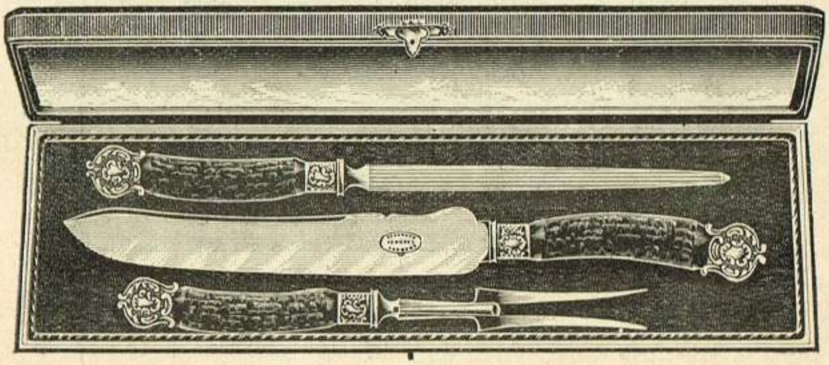
2484 Special line, Natural Stag, with Nickel Ferrules, in Velvet-lined Case, 7/6 per case.



2485 9in. Best Shear Steel Blade, Natural Tyne Stag Handles, Plated Ferrules, Velvet and Satin-lined Case. 3 pieces, 10/6 per case

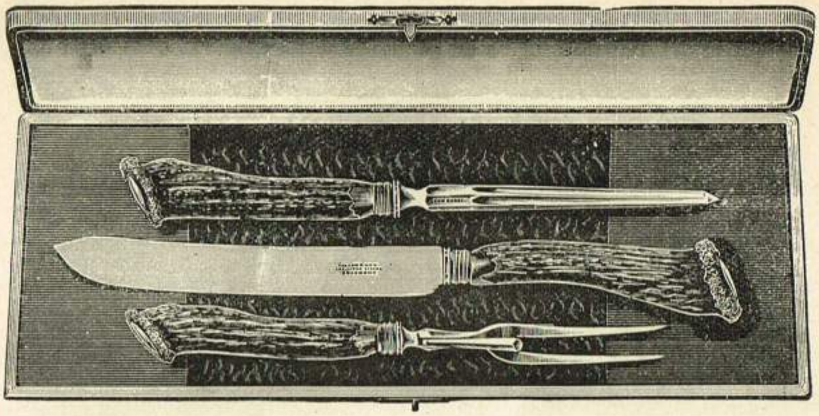


2486 9in. Best Shear Steel Blade, Best Stag, Thick German Silver Capped, thoroughly reliable, Best Velvet and Satin-lined Case. 3 pieces, 11/6 per case.



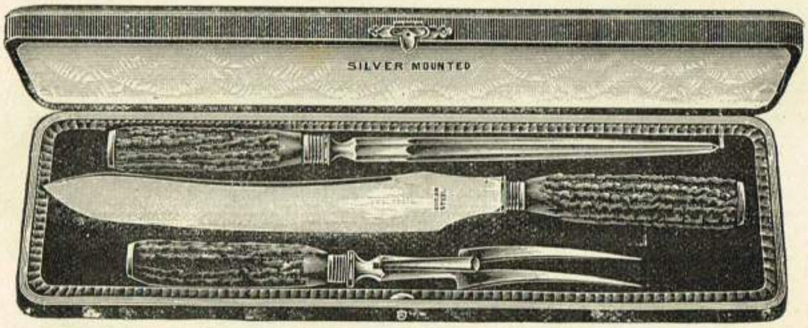
2487 Natural Stag Handles, Electro-plated Caps and Ferrules, 9in. Blade. Special Value, 13/6 per case.

Cases of Carvers—*continued.*



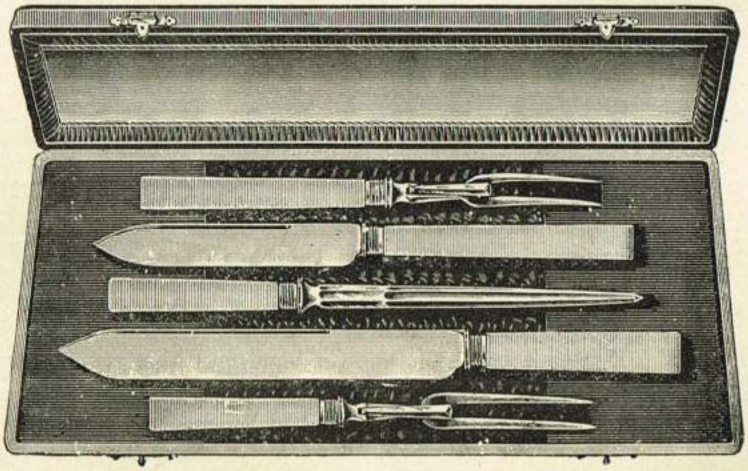
2488

Natural Stag Handles, 9in. Blades, Plated Ferrules, Best Shear Steel Blade.
Plush and Satin-lined Case, gilt outside.
3 pieces, 16/6 per Case.



2489

Best Double-shear Steel Hand-forged Blades, Best Quality Stag Handles, Solid Silver Mounts,
Best Quality Case, 17/6 per Case.



2490

9in. Best Shear Steel Blade, Strong African Ivory Handles, Heavy Sterling Silver Ferrules,
Edge-pinned, best finish throughout. Plush and Satin-lined Case.
3 pieces, 25/- ; 5 pieces, 37/6 per Case.

Special Sets of Cutlery.

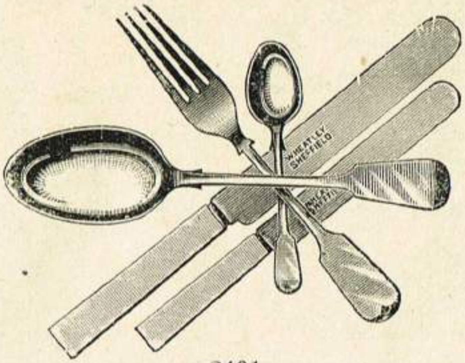
The following Sets have been specially compiled to meet the demand for a cheap but useful household outfit of Cutlery. Both in price and quality these Sets will be found to compare very favourably with any other similar sets on the market.

The 'Standard Box of Household Cutlery and Plate.

(Registered.)

50 Articles.

21/-



50 Articles.

21/-

2491

Contents :

½ doz. Table Knives
½ „ Dessert Knives
⅙ „ Table Spoons
½ „ Table Forks

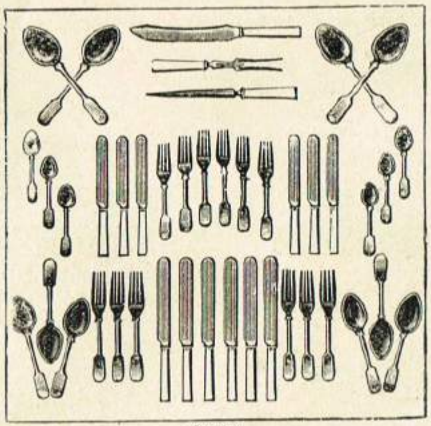
½ doz. Dessert Spoons
½ „ „ Forks
½ „ Tea Spoons
½ „ Egg „

⅙ doz. Salt Spoons
⅙ „ Mustard Spoons
1 Jam Spoon
1 pair Sugar Tongs

The "Home" Box of Household Cutlery and Plate.

Price, complete,

25/-



Price, complete,

25/-

2492

Contents :

½ doz. Table Knives
½ „ Dessert Knives
1 pair Carvers

1 Steel
⅓ doz. Table Spoons
½ „ Dessert Spoons

½ doz. Tea Spoons
½ „ Table Forks
½ „ Dessert Forks

The "Wheatsheaf" Case.

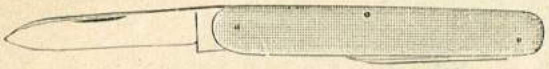
2493 Containing same number of articles as the "Home," but with Xylonite-handled Knives and heavier quality of Nickel Silver Spoons and Forks.

Price ... ... **32s. 6d.**

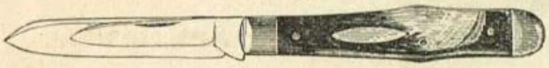
Pen and Pocket Knives.

2494 2 Blade Stag Handle Pen Knives, 1/- each.

2495 3½in. 2 Blade Stag or Buffalo Pen Knives, 1/- each.

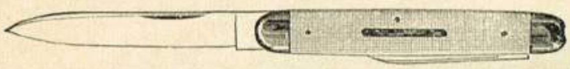


2496 3½in. 2 Blade Ivory or Buffalo Pen Knives, 1/- each.



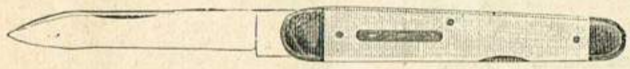
2497 2 Blade Coloured Tip Penknife, 1/6 each.

2498 3¼in. 2 Blade Best Ivory-handled Pen Knife, 2/- each.



2499 2 Blade Ivory or Stag-handled Pen Knife, 2/6 each.

2500 2 Blade Ivory or Buffalo Pen Knives, 2/6 ea.
2501 3 Blade Ivory or Buffalo Pen Knives, 3/- ea.
2502 3 Blade Pearl or Shell Pen Knives, 4/- ea.

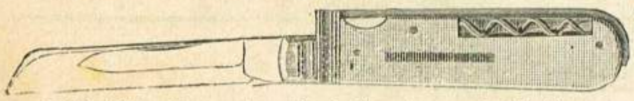


2503 3 Blade Ivory or Stag-handled Pen Knife, 3/- each.

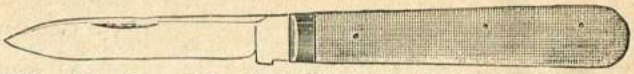
2504 2 Blade Rose or Ivory-handled Pen Knife, 3/6.
2505 3 Blade Rose or Ivory-handled Pen Knife, 4/6.

2506 3 Blade Ivory or Stag-handled Pen Knife 3/6.
2507 3 Blade Pearl or Shell-handled Pen Knife, 4/6.

2508 3 Blade Ivory or Stag Pen Knife, 6/- each.
2509 3 Blade Pearl or Shell Pen Knife, 7/6 each.

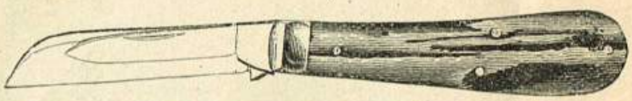


2510 3½in. Ivory-handled Sportsmen's Knife, 7 articles, 4/6 each.



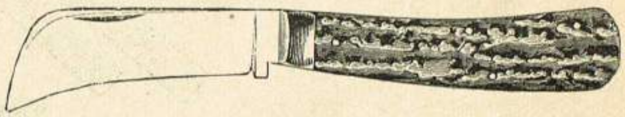
2511 3½in. Bone Handle 1 Blade Pocket Knife, 6d. each.

2512 3½in. Redwood-handled 1 Blade Pocket Knife, 6d. each.

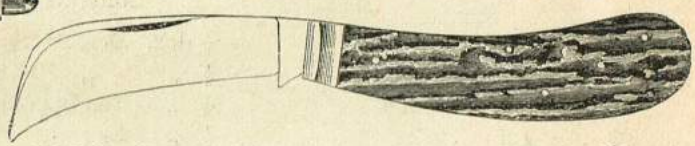


2513 3½in. Stag 2 Blade Pocket Knife, 1/- each.

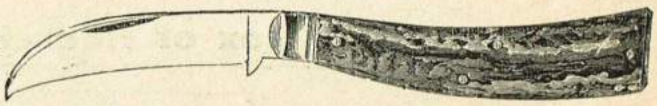
2514 3½in. Stag or Bone Handled 2 Blade Pocket Knife, 1/- each.



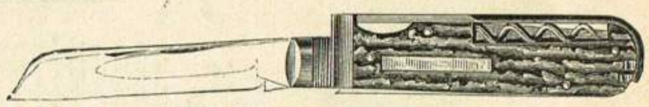
2515 4in. Chequered Horn 1 Blade Pruning Knife, 1/- ea.



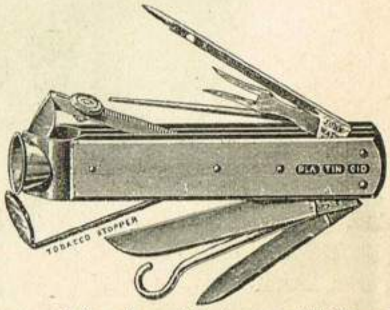
2516 4in. Pressed Horn-handled Pruning Knife, 1/6 each.



2517 4½in. Stag Horn-handled Pruning Knife, 2/6 each.



2518 3½in. Stag Handle Sportsmen's Knives, containing 8 articles, 4/- each.
2519 Ditto, with 10 articles, 5/6 each.



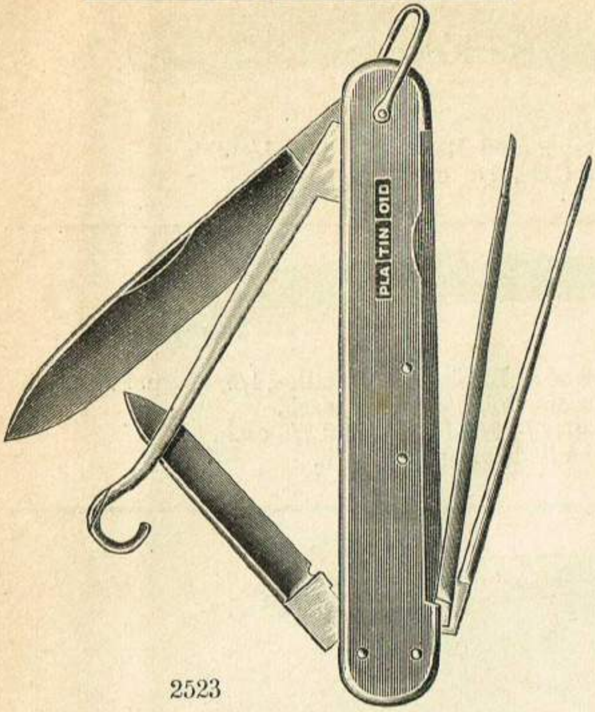
2520 Improved Smokers' Knives, with Pearl or Shell Handle, 10/6 each. With Ivory Handle, 9/6 each.

A large assortment of Sportsmen's Knives in Bone, Stag, and Ivory Handles, from 2/6 to 12/6 each.

2521 Hunting Knives, 7in. Spear Point Blades, German Silver Guard, in Strong Leather Sheath, 5/- each.
2522 Superior Finished Ditto, 7/-. 10/-, 12/6 each.

Pen and Pocket Knives—*continued.*

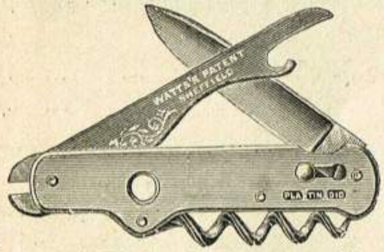
The Smokers' Companion.



2523

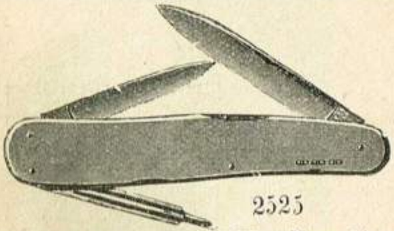
2 Blades, Button Hook, Cigar Pricker, Nail File. Platinoid Cover, with Shackle, 8/6; Ditto, Ivory Handle, 10/6; Pearl Handle, 11/6 each.

Combination Knife.



2524
Containing 1 Blade, Corkscrew, Cigar Cutter, and Wire Cutter. Price 5/- each.

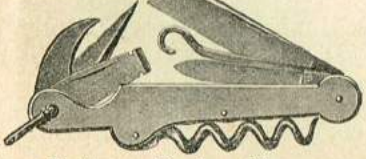
Gentleman's 2 Blade Pen Knife.



2525

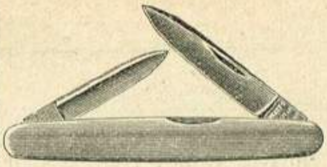
With Nail File, Nickel Handles, 3/- each.

The Sportsman's Knife.



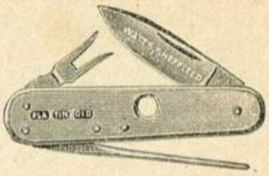
2526
2 Blades, Button Hook, Champagne Blade, Cartridge Extractor, Leather Piercer, Corkscrew, Nickel Silver Handle, with Shackle, 12/6 each.

2 Blade Pen Knife.



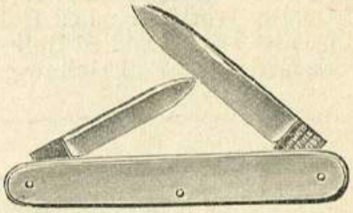
2527
Nickle Silver Handle, 2/-; Ivory or Stag, 2/6; Pearl, 3/- each.

Smokers' Knife.



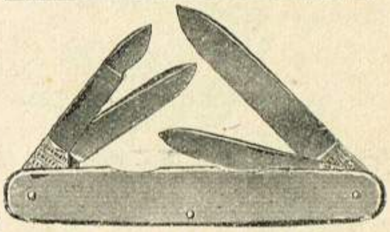
2528
1 Blade, Cigar Fork, Cutter and Pricker, Nickel, 2/6; Ivory, 3/-.

2 Blade Nickel Silver Handled Pen Knife.



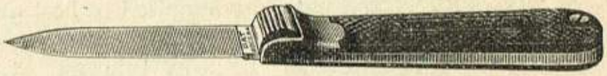
2529 1/6 each.

Four Blade Pen Knife.



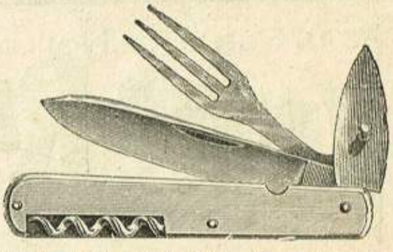
2530 Nickel Silver Handle, 3/6 each.

Novelty Pocket Knife.



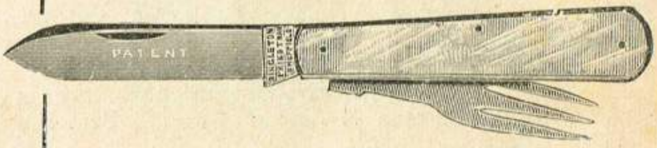
2531 This can be opened easily with one hand only. Strong and Durable. Price 1/6 each.

Luncheon Basket Knife.



2532
Containing Knife and Fork, Corkscrew, and Tin Opener. Price 4/6 each.

Picnic Knife and Fork.

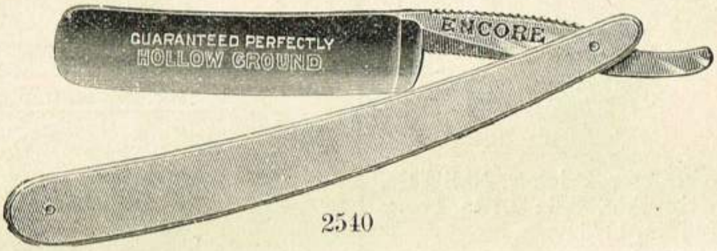


2533
Divides, forming Knife and Fork. Compact and neat, 2/6.

Razors.

2534 Black Buffalo or White Bone-handled Razor in Case, 1/- each.
2535 Special Small Corn Razor in Case, 1/6 each.

2536 Best Hollow-ground Razors, with either White Bone or Black Horn Handles, 1/6, 2/-, and 2/6 each
2537 Best Quality Ivoride-handled Hollow-ground Razors, 2/6, 3/-, 3/6, 4/6 each.
2538 Best Quality Ivory-handled Hollow-ground Razors, 4/-, 4/6, 5/-, 6/-, and 7/6 each.
2539 Roger's Extra Best Full Hollow-ground Ivory-handled Razors, 8/6 each.



2540

The "ENCORE" Brand of Best Sheffield Hollow-ground Razors is well known, and has a most excellent reputation. Every Razor is carefully set and examined, and carries a full guarantee as to its cutting qualities, grinding, and finish.

The "ENCORE" Razor, Black Handles, either ½in., ⅝in., or ¾in. Blades ... ... 4/- each.
Ditto Ivory " ditto ditto ... ... 6/- each.

"ENCORE" Razors are also supplied in best quality, 2, 3, 4, and 7-day cases, at following prices :

	BLACK.	IVORY.
2-day, Roan Cases, "ENCORE" Razors	12/- ...	16/6 per case.
3-day ditto ditto	17/- ...	23/6 "
4-day ditto ditto	21/6 ...	30/- "
7-day ditto ditto	38/- ...	51/6 "

2541

2543

2541 Kropp's Celebrated German Hollow-ground Razors, Black Handle, 5/6 ; Ivory Handle, 7/6 each.
2542 Set of 7 Razors in case, etched with days of the week, 42/6 ; ditto Ivory Handles, 57/6 per case.
2543 Kropp's Razor Paste, 6d. per box.

N.B.—No Guarantee whatever is given with Kropp's Razors.

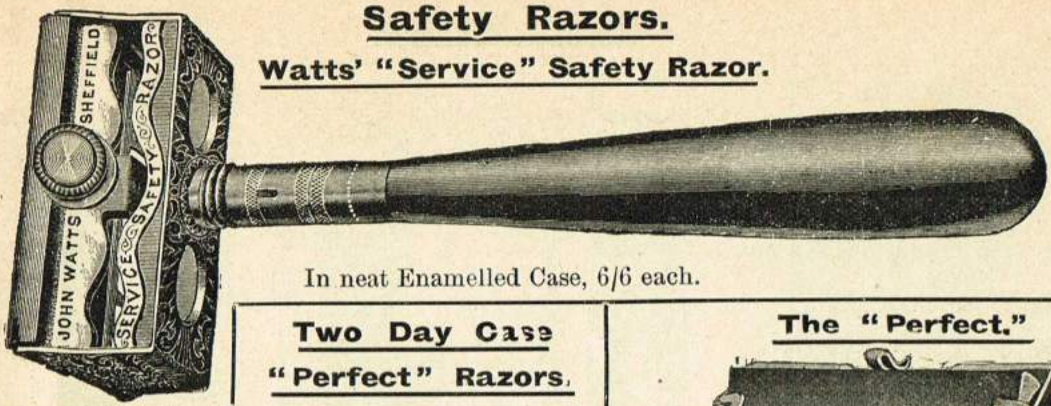
2544 Genuine German Made and Ground, Best Black-handled, Hollow Ground Razors, 1/6, 2/-, 2/6, 3/-, 3/6 each.

These are excellent value, and most reliable goods. They are fully warranted, and any defective ones will be immediately replaced.

Safety Razors.

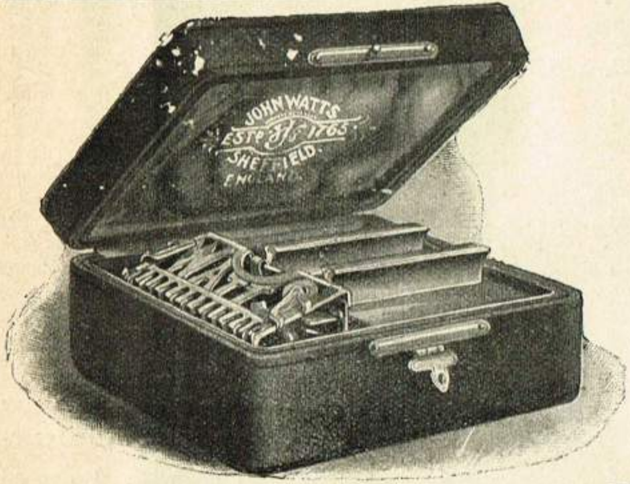
Watts' "Service" Safety Razor.

2545



In neat Enamelled Case, 6/6 each.

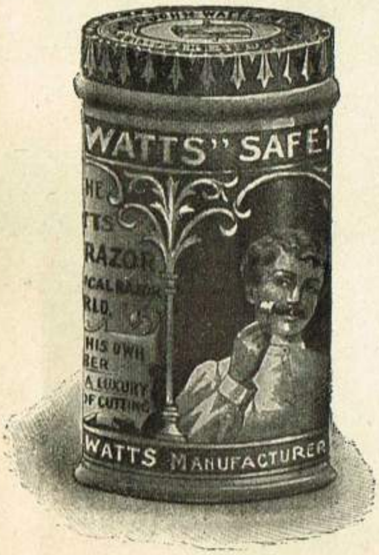
Two Day Case "Perfect" Razors.



2546

Complete, 12/6 per case. Extra Blades for Ditto, 2/6 each extra, making a Three, Four, or Seven Day Case at small additional cost.

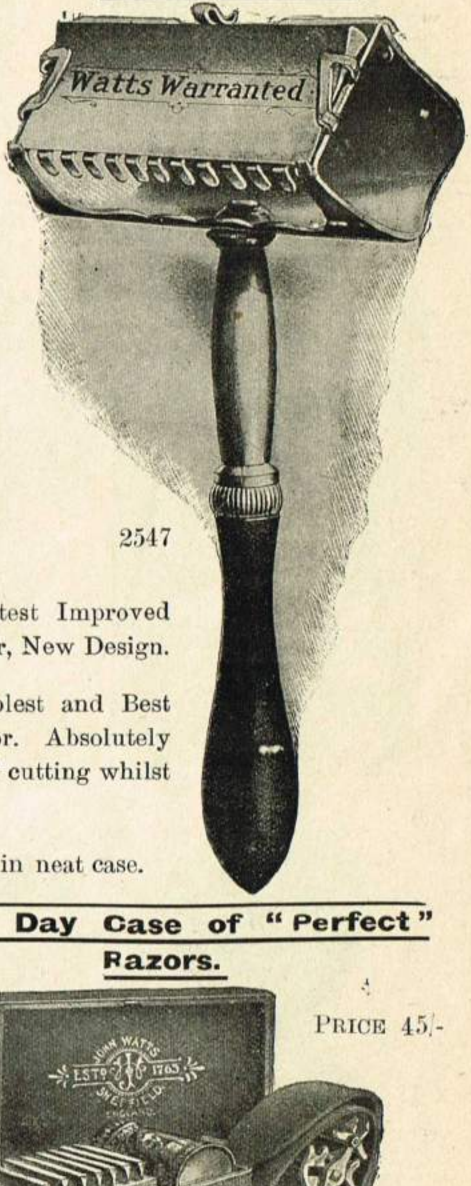
Cases in which Single Safety Razors are Supplied.



2548

Illustration shows actual size.

The "Perfect."



2547

Watts' Latest Improved Safety Razor, New Design.

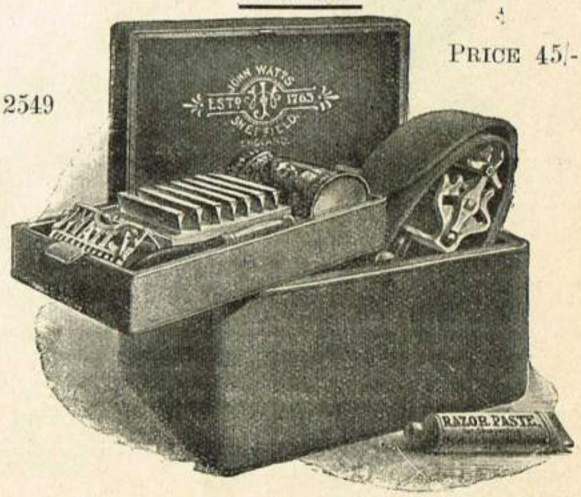
The Simplest and Best Safety Razor. Absolutely no danger of cutting whilst shaving.

Price 5/6, in neat case.

Seven Day Case of "Perfect" Razors.

2549

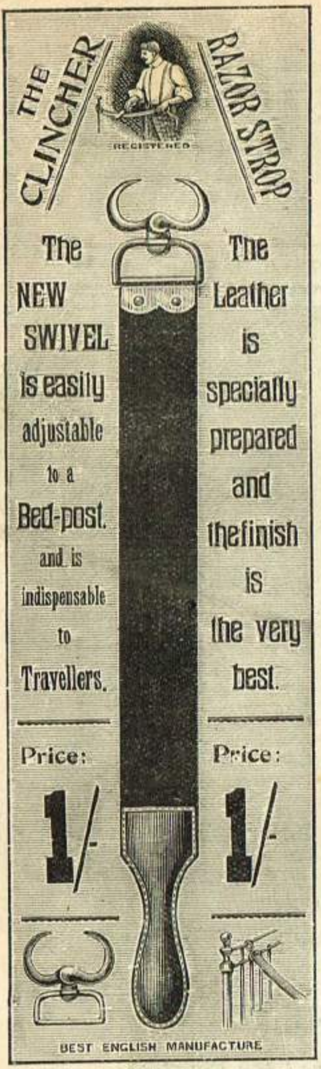
PRICE 45/-



Complete, with Patent Automatic Stropping Machine.

Other Patterns of Watts' Safety Razors are supplied at 2/6, 3/6, and 4/6 each.

Razor Strops.



THE CLINCHER RAZOR STROP

REGISTERED

The NEW SWIVEL is easily adjustable to a Bed-post. and is indispensable to Travellers.

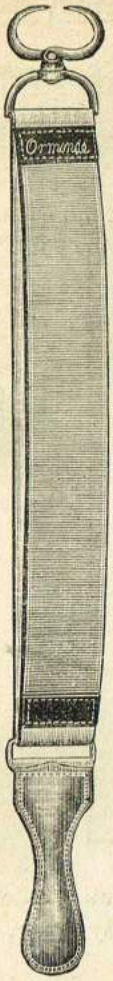
The Leather is specially prepared and the finish is the very best.

Price: 1/-

Price: 1/-

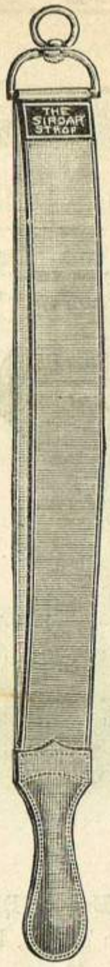
BEST ENGLISH MANUFACTURE

2550



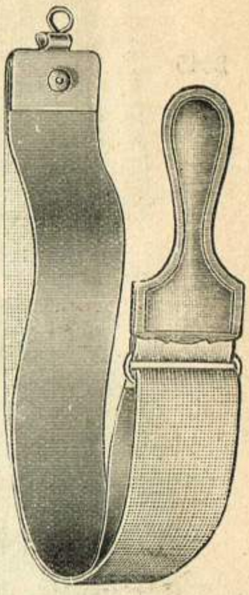
2551

The “Ormonde” Strop, Heavy Tan Hide, with Prepared Canvas Back, 16½in. by 2¼in., 1/6 each.



2552

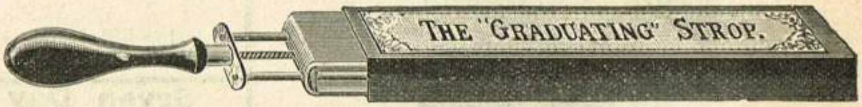
The “Sirdar” Strop, Real Seal Skin, with Best Prepared Canvas Back, 2/- each.



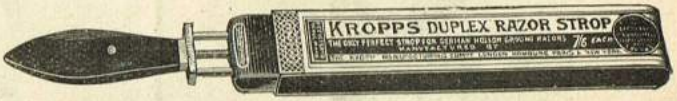
2553

The “Barber's” Strop, Genuine Oiled Horsehide, with Prepared Canvas Backs, 24in. by 2in., 2/6 each.

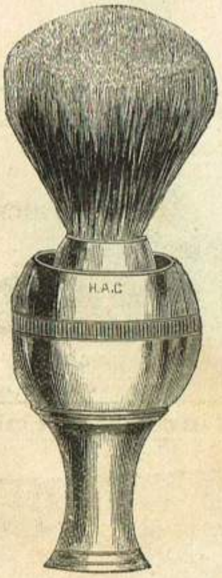
2554 Cushion Razor Strops, in Cases, 1/-, 1/6, and 2/- each.


THE "GRADUATING" STROP.

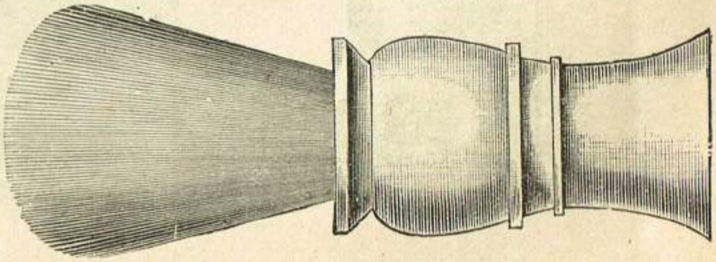
2555 The Graduating Razor Strop, 2/-, 3/- each.



2556 Kropp's Original Graduating Razor Strop, 7/6 each.

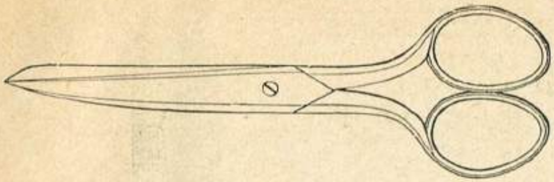


2557
Improved Drip Cup Shaving Brush, Best Badger Hair, 2/- and 3/- each.

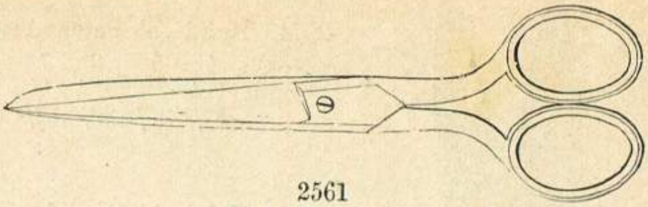


2558 Shaving Brushes in great variety. Excellent value at 6d., 1/-, 1/6, 2/-, 2/6 each.

Scissors.

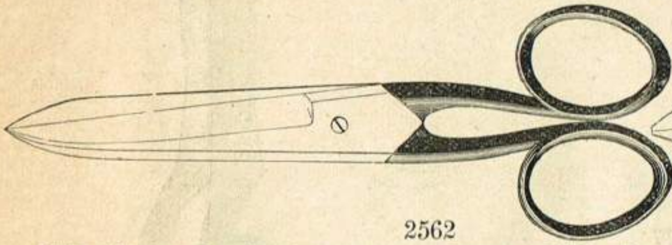


2559 and 2560

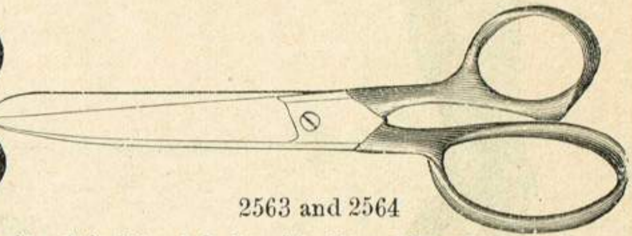


2561

2559 Good Quality Shaping and Cutting-out Scissors, 5in. 10d., 5½in. 1/-, 6in. 1/3, 6½in. 1/6, 7in. 1/9 each.
2560 Superior Finish Ditto, 5in. 1/3, 5½in. 1/6, 6in. 1/9, 6½in. 2/-, 7in. 2/3 each.
2561 Best Quality Polished Scissors, 4½in. 1/3, 5in. 1/6, 5½in. 1/9, 6in. 2/-, 6½in. 2/3, 7in. 2/6 each.

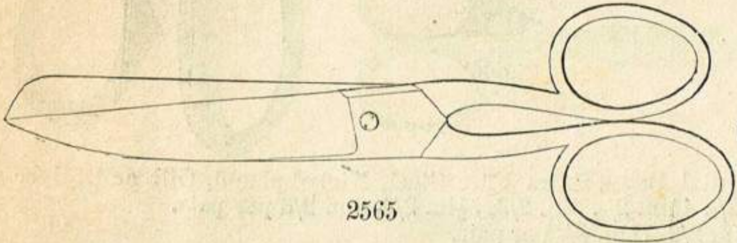


2562

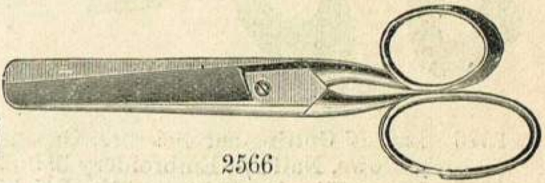


2563 and 2564

2562 Strong Cutting-out Scissors, Japanned Handles, 6in. 1/6, 6½in. 1/9, 7in. 2/-, 7½in. 2/3 each.
2563 Improved Pattern Cutting-out Scissors, Japanned Handles, 6in. 2/-, 6½in. 2/3, 7in. 2/6, 7½in. 3/-, 8in. 3/6
2564 Ditto with Nickel-plated Bows, 6in. 2/6, 6½in. 2/9, 7in. 3/-, 7½in. 3/6, 8in. 4/- each.

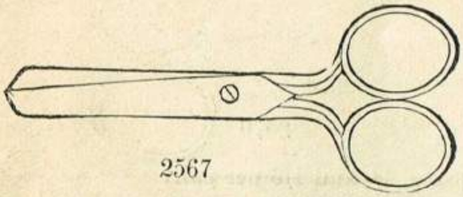


2565

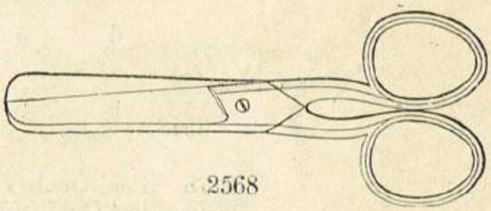


2566

2565 Strong Tailors' Scissors, 6in. 1/-, 6½in. 1/3, 7in. 1/6, 7½in. 2/, 8in. 2/3, 8½in. 2/6, 9in. 3/- each.
2566 Improved Pattern Drapers' Scissors, Plated Bows, 4½in. 2/-, 5in. 2/3 each.

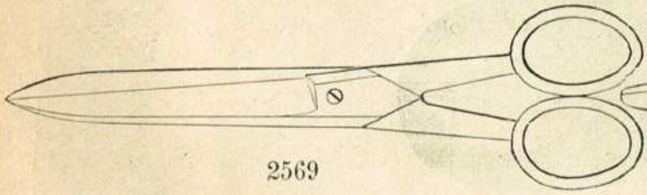


2567

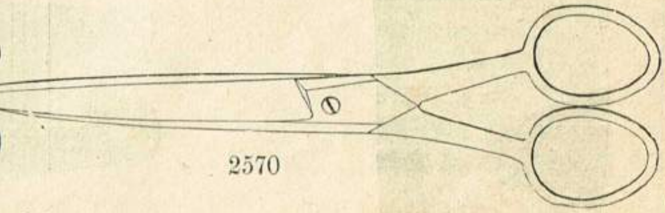


2568

2567 Drapers' Scissors, 4½in. 1/-, 5in. 1/3 each.
2568 Best Quality Ditto, 4½in. 1/6, 5in. 1/9 each.

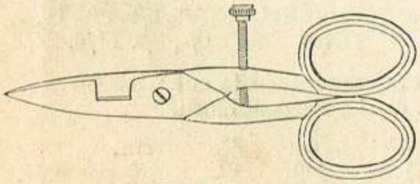


2569

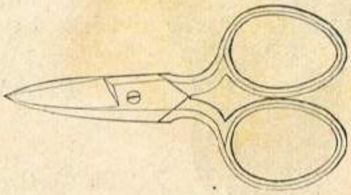


2570

2569 Hairdressers' Scissors, 6½in. 2/-, 7in. 2/3, 7½in. 2/6 each.
2570 Best London Pattern Ditto, 6½in. 2/3, 7in. 2/6, 7½in. 3/- each.



2572



2573

2571 Button Hole Scissors, 1/- each.
2572 Button Hole Scissors, with Regulating Screw, 1/6 each.

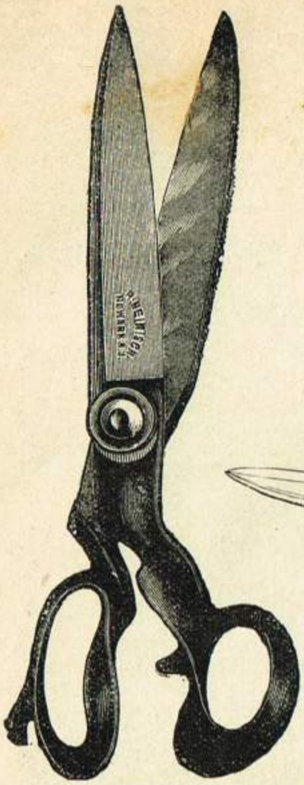
2573 Extra Strong Nail Scissors, 2/- each.

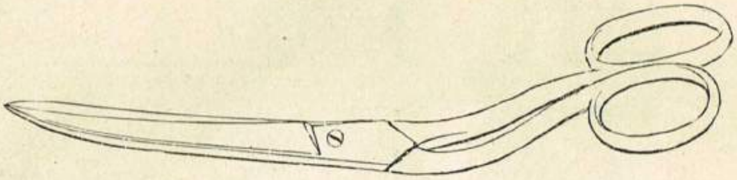
Scissors—*continued.*

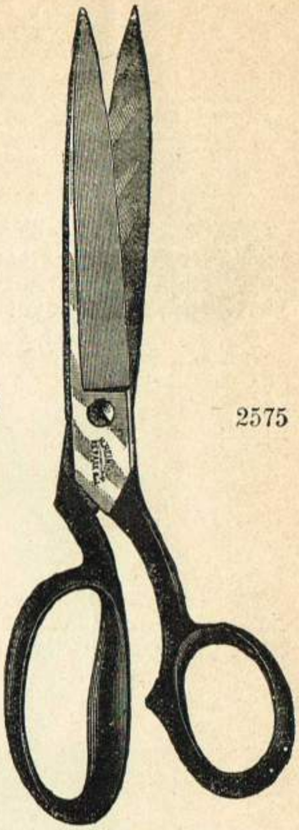
2574 Heinisch's Patent American Tailors' Shears.

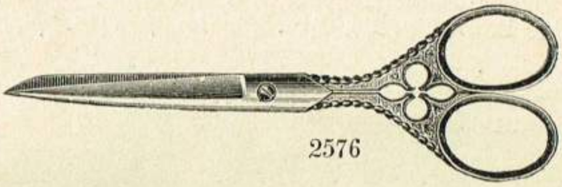
Nos.	4	5	6	7	8	9	10	
Length	12½	13	13½	14	14¼	14¾	15¼	
	18/-	26/-	29/-	32/-	36/-	40/-	44/-	per pair.

2575 Heinisch's American Mantle Scissors, Bent Shanks,
10in. 4/6, 11in. 5/-, 12in. 5/6, 13in. 6/- per pair.

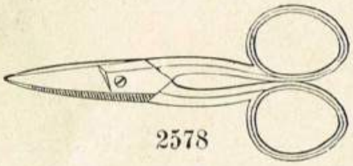

2574

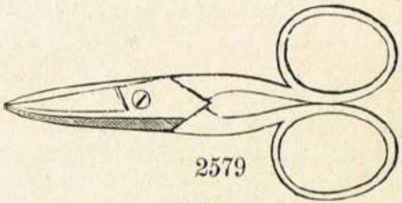

2577


2575

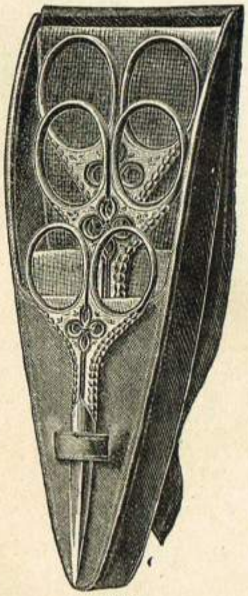

2576

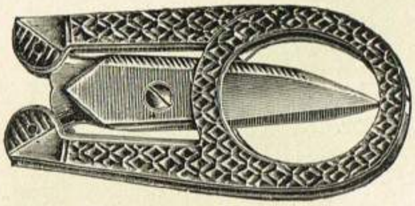
2576 Ladies' Cutting-out Scissors, Ornamental Bows, Extra Fine Steel, Nickel-plated, Gilt and Silver Bows, Nail 2/-, Embroidery 3½in. 2/-, 4½in. 2/-, 5in. 2/3, 5½in. 2/6, 6in. 2/6 per pair.
2577 Horse Clipping Scissors, 6½in. 2/6, 7in. 2/9, 7½in. 3/- per pair.

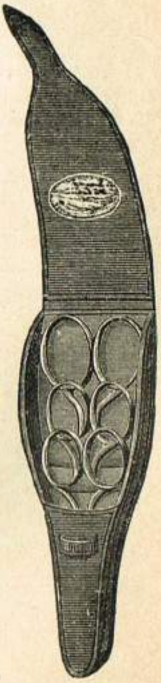

2578


2579

2578 Good Quality Nail Scissors, 1/- and 1/6 per pair.
2579 Best Quality Nail Scissors, 2/- per pair.


2586


2581


2582

2580 Good Quality Nickel-plated Folding Nail Scissors, 1/6 per pair.
2581 Fine Cut Folding Scissors with Leather Case, 2/-, 2/6 and 3/6.
2582 Scissors in Cases—3 Pairs Best Scissors in Case, 4/6, 6/6, 9/6, 16/-.
2583 Ditto 4 Pairs Ditto 6/-, 8/-, 11/6, 21/-

Perry's Patent Guillotine Scissors guaranteed to cut with ease either the softest silk or the hardest cloth.

		Nail	5½	6	6½	7in.	
2584	Ordinary Finish	1/6	1/6	1/9	2/-	2/6	per pair.
2585	Extra Fine Polished	2/6	2/6	3/-	3/6	4/-	„ „

2586 Fine Plush Case, with 3 Pairs very Handsome Scissors, Best Quality, 10/6.

Best Quality Electro-plated Spoons and Forks.

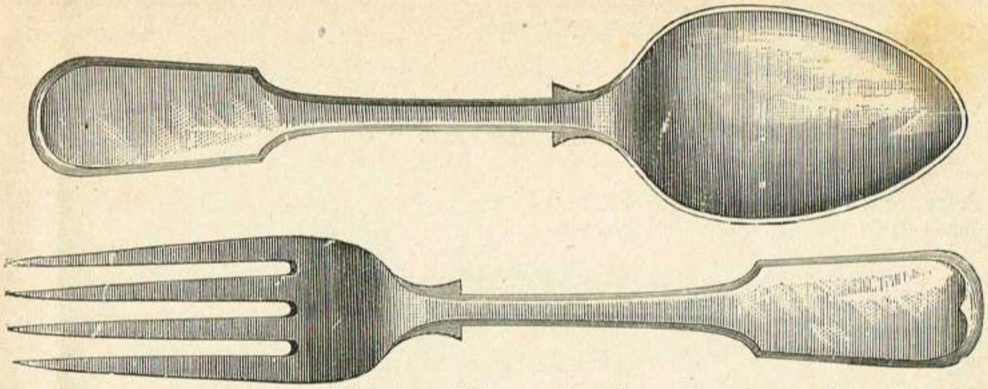
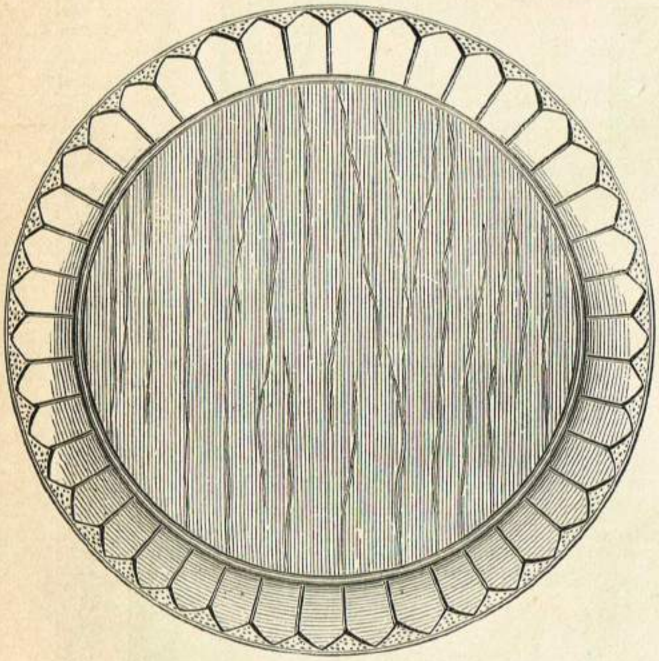
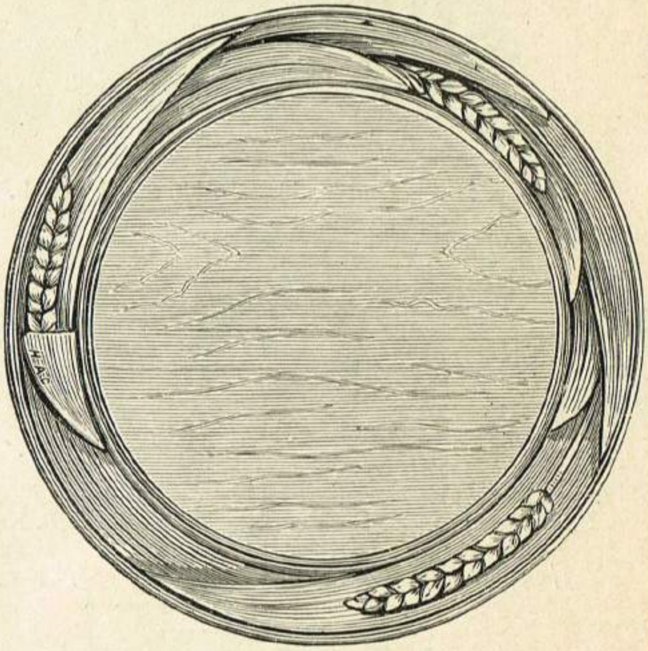


		Table Spoons. per pair.	Table Forks. per ½doz.	Dessert Spoons. per ½doz	Dessert Forks. per ½doz.	Tea Spoons. per ½doz.	Egg, Mustard, or Salt Spoons. each.
2587	"A" Quality Silver-plated on Pure Nickel Silver...	4/-	12/6	10/-	10/-	6/-	10d.
2588	"B" Quality ditto ...	3/6	10/6	8/-	8/-	5/-	8d.
2589	"C" Quality ditto ...	3/-	8/6	6/-	6/-	3/6	6d.
2590	Best Quality Pure Nickel Silver	1/3	3/6	2/3	2/3	1/6	3d.

Egg, Mustard, or Salt Spoons, with Gilt Bowls, 3d. each extra.

Wood Bread Platters and Bread Knives.

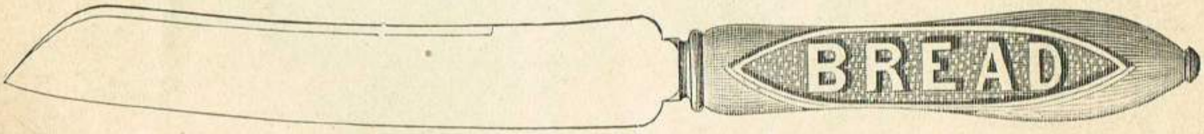




2591 Carved Wood Bread Plates, 11in. 1/-, 12in. 1/9
2592 Butters to match with Glass Linings, 7½in. 10d., 8½in. 1/3 each.

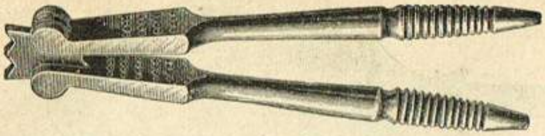
2593 Best Wheat Bordered Bread Plates, 12in. 3/6, 13in. 4/- each.
2594 Butters to match, 8in. 2/6, 9in. 3/- each.

Bread Knives and Forks.



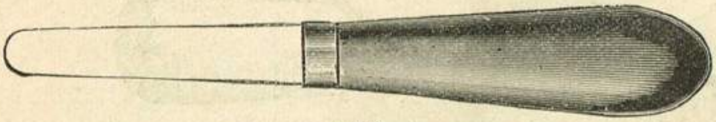
2595	Carved Wood-handled Bread Knives	1/-	1/6	2/- each.		
2596	Carved Bone-handled Bread Knives	2/6	3/6 each.			
2597	Xylonite-handled Bread Knives	3/6	4/6 ,,			
2598	Silver-plated Bread Forks	3/-	3/6	4/-	5/-	6/- each.

Cooks' Knives and Sundries.

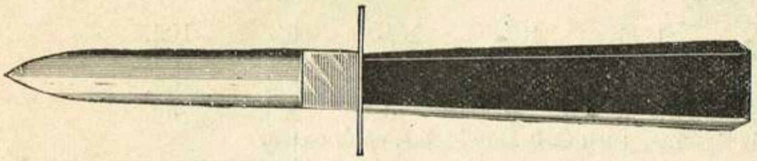


2599

Nut Crackers ... ... 9d. and 1/- per pair.
Electro-plated ditto ... 1/6, 2/-, and 2/6 „

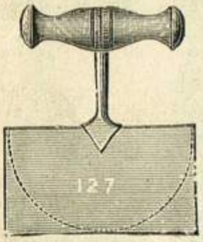


2600
Oyster Knives, 4½d. each.

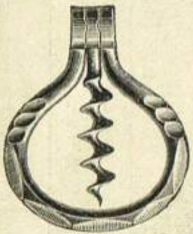


2601
Oyster Knives with Guard, 1/- each.

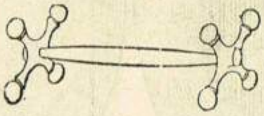
2602
Knife Boards, 6d., 9d., 1/-, and 1/6 each.



2603
C.S. Mincing Knives,
1/- each.

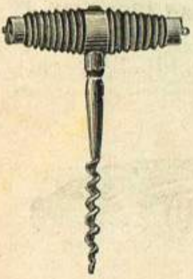


2604
Pocket Corkscrews.
6d., 9d., and 1/- each.

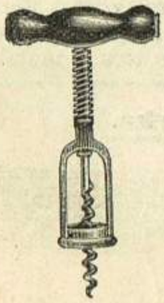


2605
E.P. Knife Rests.
2/6 per pair.

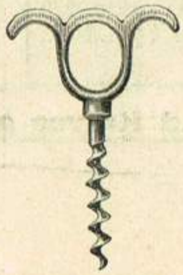
Corkscrews.



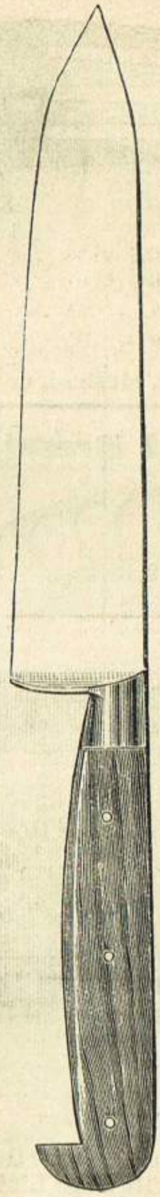
2606
4d. and 6d. each.



2607
9d. each.

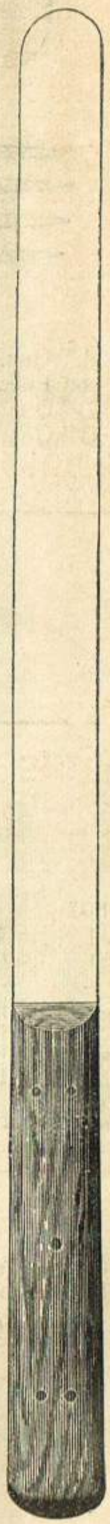


2608
6d. each.



2609

2609 Best Sheffield-made Cooks' Knives, 5in., 1/6; 6in., 1/9; 7in., 2/-; 8in., 2/6; 9in., 2/9; 10in., 3/3 each.
Ditto ditto Forks ... ... 1/6, 2/- and 2/6 „



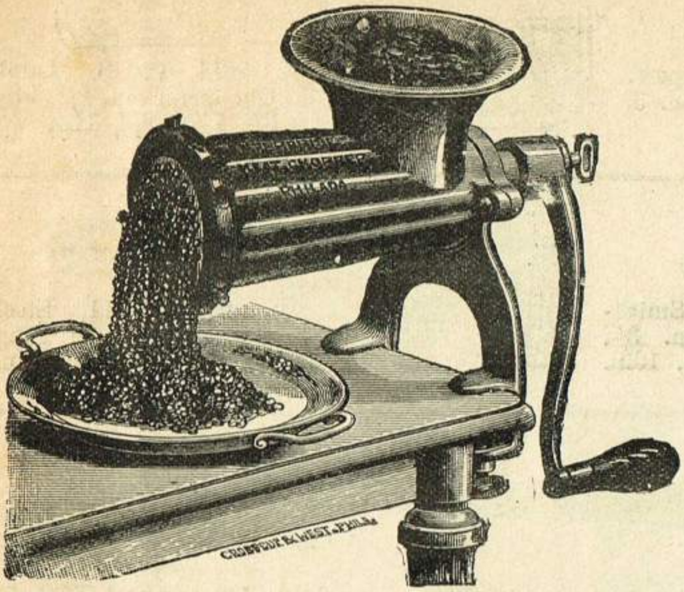
2610

2610 Ham Knives, Cocoa Handle, 1/9, 2/-, 2/6; Ebony Handle, 2/-, 2/6; Xylonite Handle, 2/6, 3/- each.
Beef Slicers... ... ... 10in., 7/6; 11in., 9/-; 12in., 10/6 per pair.

Lever Corkscrews, 1/- and 1/6 each.

Can Openers, 4d., 6d., and 9d. each.

Mincing Machines and Meat Choppers.


CRAWFORD & WEST, PHILA.

The "Enterprise" Meat Chopper.

2611

Each tinned by a patent process. Nothing can excel this Machine for chopping sausage meat, mince meat, etc.

The blades are self-sharpening. The plates are made with holes of various sizes, viz.: $\frac{5}{32}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, and $\frac{1}{2}$in.

The standard size ($\frac{5}{32}$) is always sent with each machine.

Nos. 5 and 10 have clamps, as illustrated; all others have legs, and must be screwed to the table.

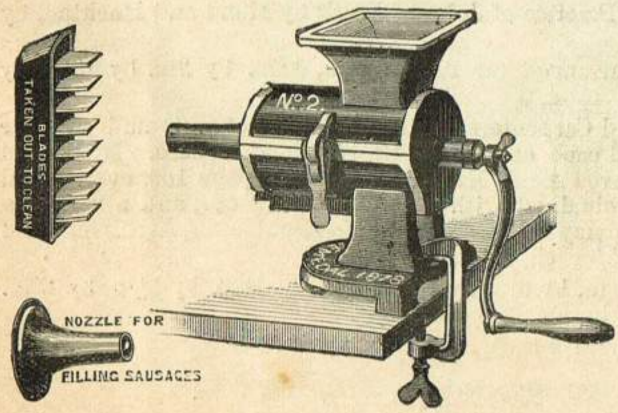
No.	Chops per Minute.	Each.	No.	Chops per Minute.	Each.
5	1lb. of Meat	7/-	22	3lb. of Meat	12/6
10	2lb. "	10/-	32	4lb. "	18/6
12	2lb. "	8/6	42	5lb. "	50/-

PRICE LIST OF SEPARATE PARTS.

No.	Knives.	Plates.	Rings.	Cranks.	Thumb Screws.	Filler Attachments.	Cross Bars or Washers.	Clamp Screws.
5	10d.	1/-	10d.	10d.	6d.	1/3	6d.	8d.
10	1/-	1/9	1/-	1/-	6d.	1/6	10d.	10d.
12	1/-	1/9	1/-	1/-	6d.	1/6	—	—
22	1/6	3/-	3/-	1/9	7d.	1/9	—	—
32	2/-	3/6	5/6	3/-	10d.	2/3	—	—
42	3/6	10/6	10/6	3/6	1/-	7/6	—	—

The New "Enterprise" Food Chopper ... ... 5/6 each.

The "Invicta" Mincer and Sausage Machine.

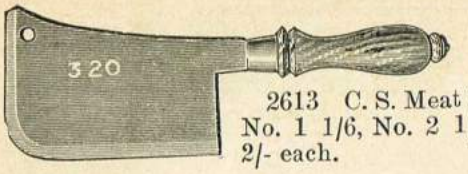


2612

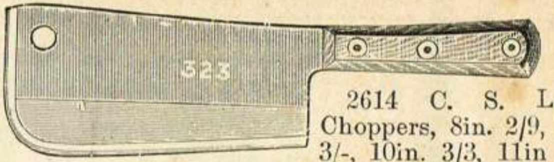
They are well made. The Blades take out without a screw. Enamelled white inside.

No. 1	... ...	6/6 each.
" 2	... ...	9/6 "
" 3	... ...	12/6 "

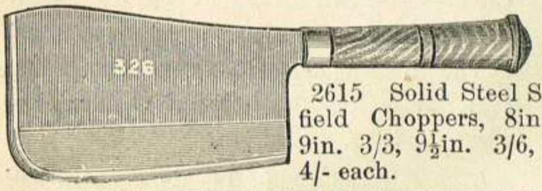
Butchers' Tools and Requisites.



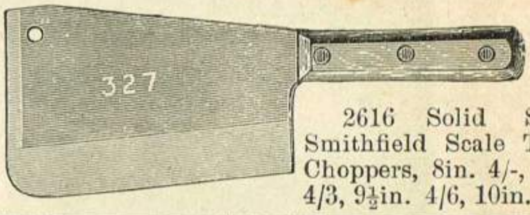
2613 C. S. Meat Choppers. No. 1 1/6, No. 2 1/9, No. 3, 2/- each.



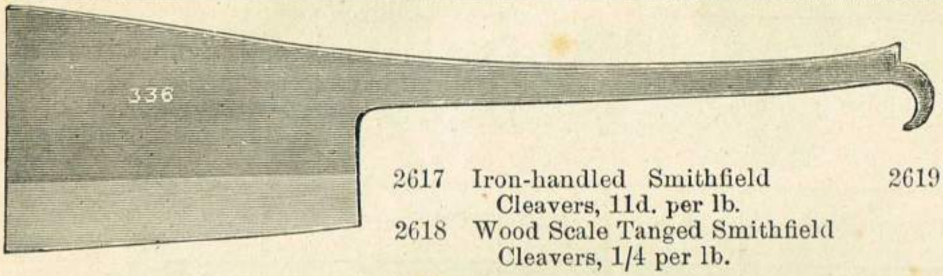
2614 C. S. Lamb Choppers, 8in. 2/9, 9in. 3/-, 10in. 3/3, 11in 4/- each.



2615 Solid Steel Smithfield Choppers, 8in. 3/-, 9in. 3/3, 9½in. 3/6, 10in. 4/- each.

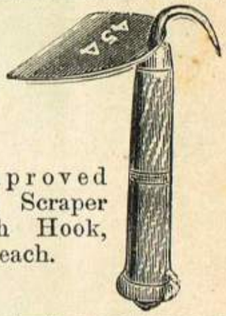


2616 Solid Steel Smithfield Scale Tang Choppers, 8in. 4/-, 9in. 4/3, 9½in. 4/6, 10in. 5/-.

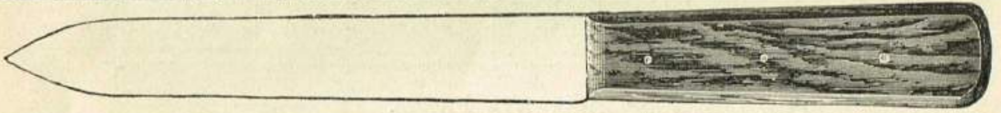


2617 Iron-handled Smithfield Cleavers, 11d. per lb.

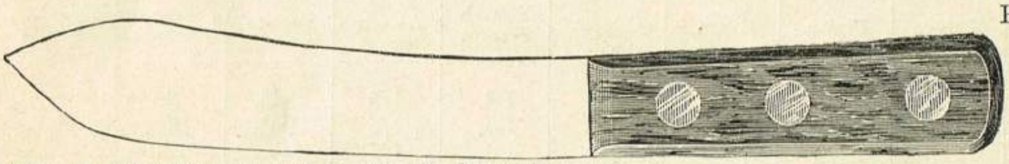
2618 Wood Scale Tanged Smithfield Cleavers, 1/4 per lb.



2619 Improved Pig Scraper with Hook, 1/9 each.



2620 Rosewood-handled Sticking Knives, 6in. 1/-, 6½in. 1/-, 7in. 1/3.



2621 Hardwood-handled Butchers' Knives, 6in. 1/-, 7in. 1/4, 8in. 1/8, 9in. 2/-, 10in. 2/6, 11in. 3/-, 12in. 3/9 each.

2622 Butchers' Steels, 1/6, 2/-, 2/6, 3/-, 3/6 each.

2623 Butchers' Bow Saws and Frames, best quality, with Tightening Screw, 14in. 5/6, 16in. 6/-, 18in. 6/6, 20in. 7/-, 22in. 7/6 each.

2624 Butchers' Pole-axes, 4/6, 5/6, 6/6 each.

Omissions from List, and Additions.

1385B Hodgson's Book on the Steel Square and its Uses, 4/- each, post free.

1385I Best Rule-marked Iron Squares, 18in. by 1¼in. by 12in. by 1in., 1/6 each; 24in. by 1½in. by 12in. by 1in., 2/- each.

1385J Modern Practical Joinery, a Treatise on the Practice of Joiners' Work by Hand and Machine, by George Ellis. PRICE 12/6 each.

1385M Improved Framing and Masons' Squares, arranged for Plumb Bob, 18in. by 2in. by 12in. by 1½in., 3/- each; 24in. by 2in. by 12in. by 1½in., 3/6 each

1385N Newland's Ready Reckoner for Builders and Carpenters, giving all measurements and cuts for 890 Roofing Timbers, all worked out and each one tested by the Steel Square. By the aid of this Book, and of Chesterman's Improved Angle Rule, described on page 169, every bevel for any possible roof can be instantly obtained without any working out, and a man can mark off all roofing timbers without delay or hesitation. Invaluable to Architects and others in estimating quantities. PRICE 5/- each, post free.

1385S Best Rule-marked Steel Squares, 12in. by 1in. by 6in. by 1in., 2/- each; 18in. by 1½in by 12in. by 1in., 3/- each; 24in. by 1½in. by 12in. by 1in., 3/6 each.

1403½ Extra Large Size Yankee Ratchet Turnscrews, 7/6 each.

1291 Spirit Level, 10in., Price should be 3/6, NOT 2/9.

PRINTED AT THE LONDON AND COUNTY PRINTING WORKS, DRURY LANE, LONDON, W.C.

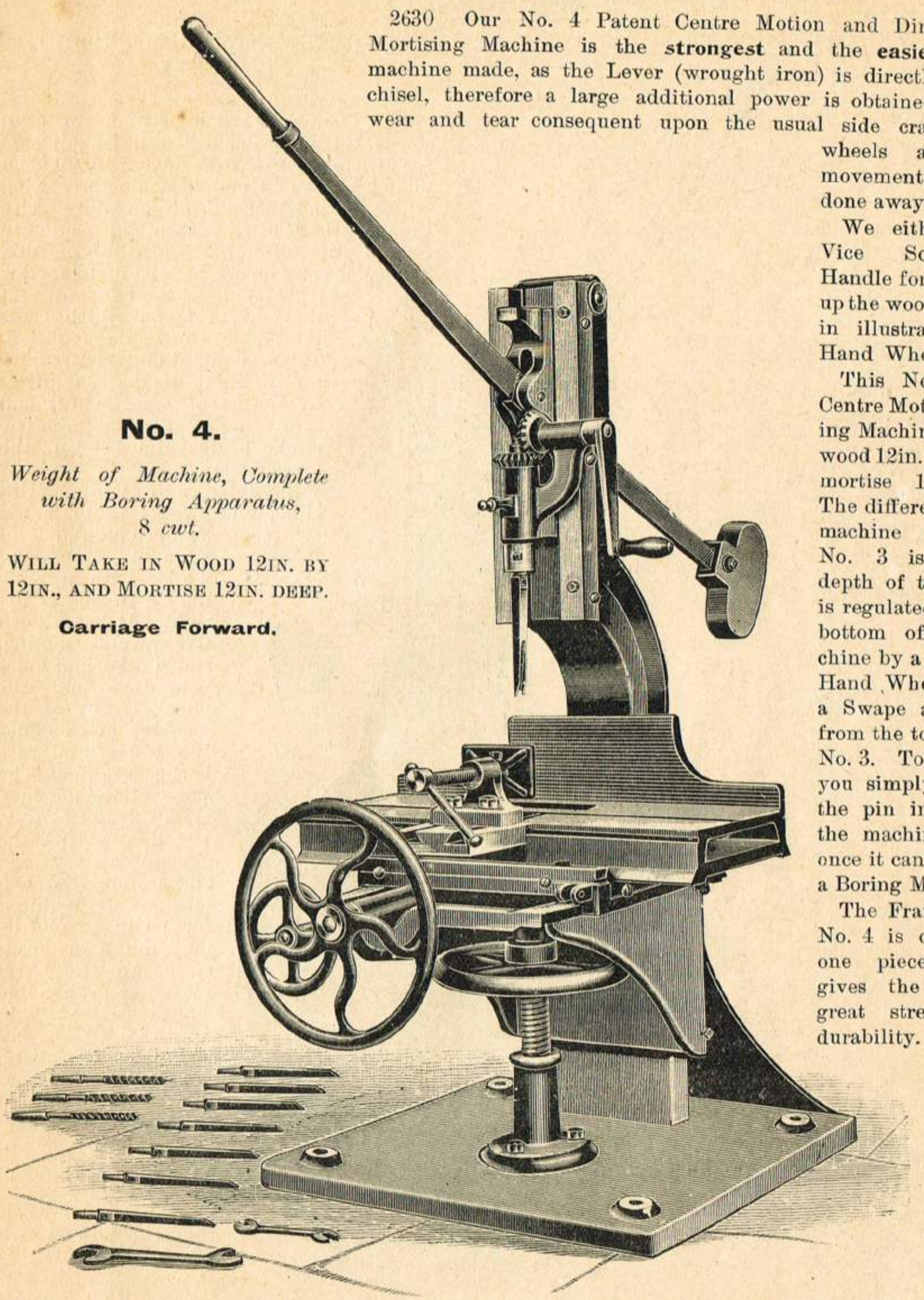
Patent Centre Motion Mortising, Boring, and Tenoning Machine.

2630 Our No. 4 Patent Centre Motion and Direct Action Mortising Machine is the **strongest** and the **easiest** worked machine made, as the Lever (wrought iron) is directly over the chisel, therefore a large additional power is obtained, and the wear and tear consequent upon the usual side crank pinion wheels and toggle movement is entirely done away with.

We either put a Vice Screw and Handle for tightening up the wood, as shown in illustration, or a Hand Wheel.

This New Pattern Centre Motion Mortising Machine will take wood 12in. square and mortise 12in. deep. The difference in this machine from our No. 3 is that the depth of the mortise is regulated from the bottom of the machine by a Screw and Hand Wheel, not by a Swape and Screw from the top as in our No. 3. To bore holes you simply draw out the pin in front of the machine, and at once it can be used as a Boring Machine.

The Frame of our No. 4 is cast all in one piece, which gives the machine great strength and durability.



No. 4.

Weight of Machine, Complete with Boring Apparatus, 8 cwt.

WILL TAKE IN WOOD 12IN. BY 12IN., AND MORTISE 12IN. DEEP.

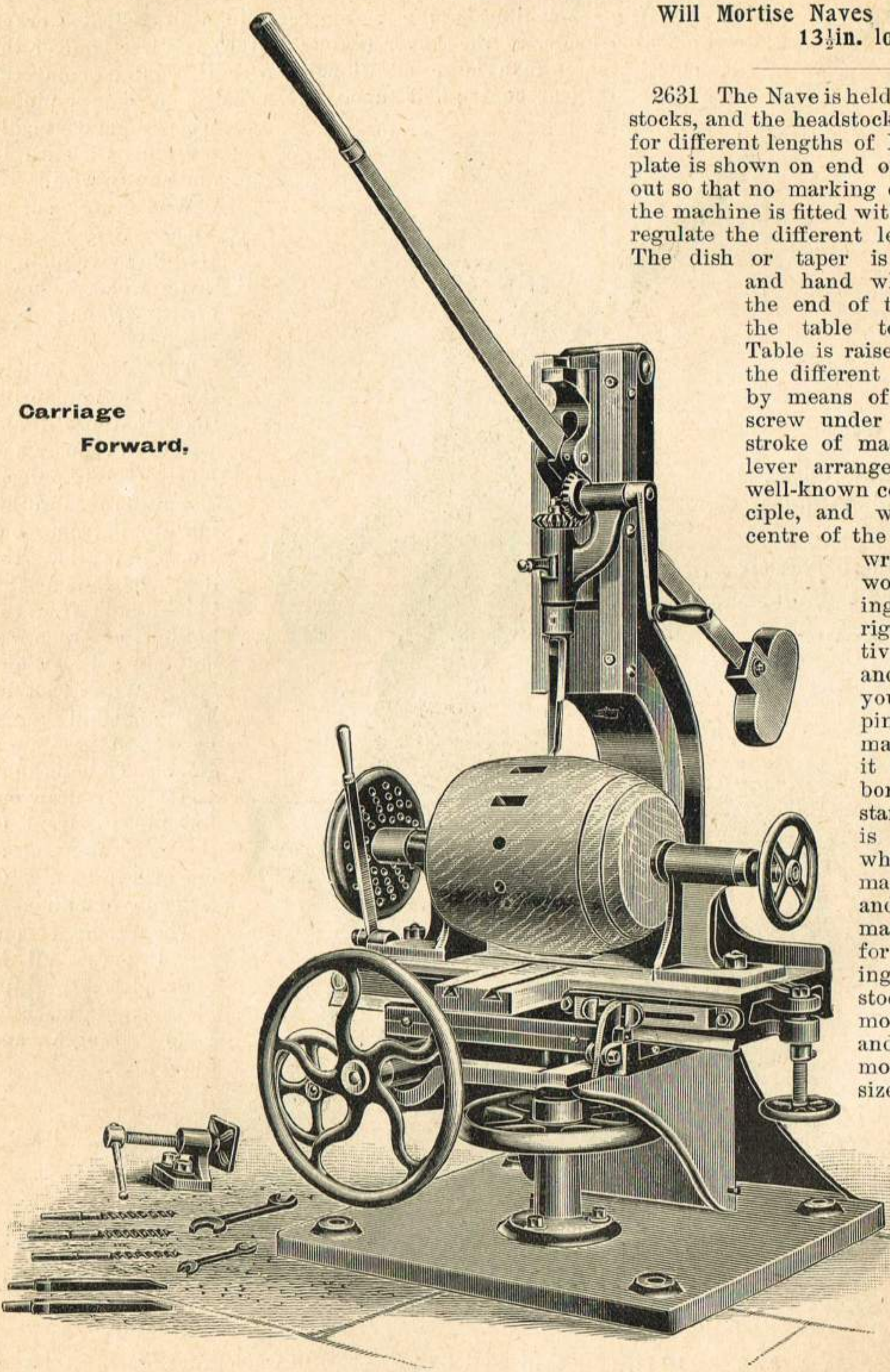
Carriage Forward.

	£	s.	d.
PRICE, including $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{4}$, and $1\frac{1}{2}$in. Best Cast Steel Solid Chisels, 3 Core Drifters, and 2 Screw Keys, and $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and $\frac{7}{8}$in. Augers for Boring, and $\frac{1}{4}$ and $\frac{5}{8}$in. Cast Steel Drills	21	0	0
,, With Self-coring instead of ordinary Chisels and Drifters, same sizes as above, also Augers and Drills as above	23	10	0

The "Eureka" Hand Power Hub Mortising and Boring Machine.

Will Mortise Naves 12in. diameter, $13\frac{1}{2}$in. long.

Carriage Forward.



2631 The Nave is held between two headstocks, and the headstocks can be adjusted for different lengths of Naves. A division plate is shown on end of table for setting out so that no marking off is required, also the machine is fitted with a stop motion to regulate the different lengths of mortise. The dish or taper is given by screw and hand wheel as shown at the end of table, which cants the table to angle required. Table is raised and lowered for the different depths of mortises by means of hand wheel and screw under the table. The stroke of machine is $6\frac{1}{2}$in., the lever arrangement is on our well-known centre motion principle, and works through the centre of the upright, and is of wrought iron and works with a rocking bar in side of upright. It has a positive reverse motion, and in boring holes you draw out the pin in front of the machine and at once it can be used as a boring machine. The stand of the machine is in one casting, which makes the machine very strong and durable. When machine is required for ordinary mortising, the two headstocks are simply removed from the table and then it is ready to mortise timber of any size up to 12in. square. Two tables are not required in this machine as in other machines.

The Chisels supplied with this machine are Self-coring.

PRICE, including $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, and 1in. Self-coring Chisels, and $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, and 1in. Boring Augers, £25 10 0

Approximate Weight 8 cwt. 2 qrs.

Improved Patent Centre Motion Mortising, Boring, and Tenoning Machine.

SPECIALLY ADAPTED FOR WHEELWRIGHTS, JOINERS, BUILDERS, &c.

Weight of Machine, 4 cwt.

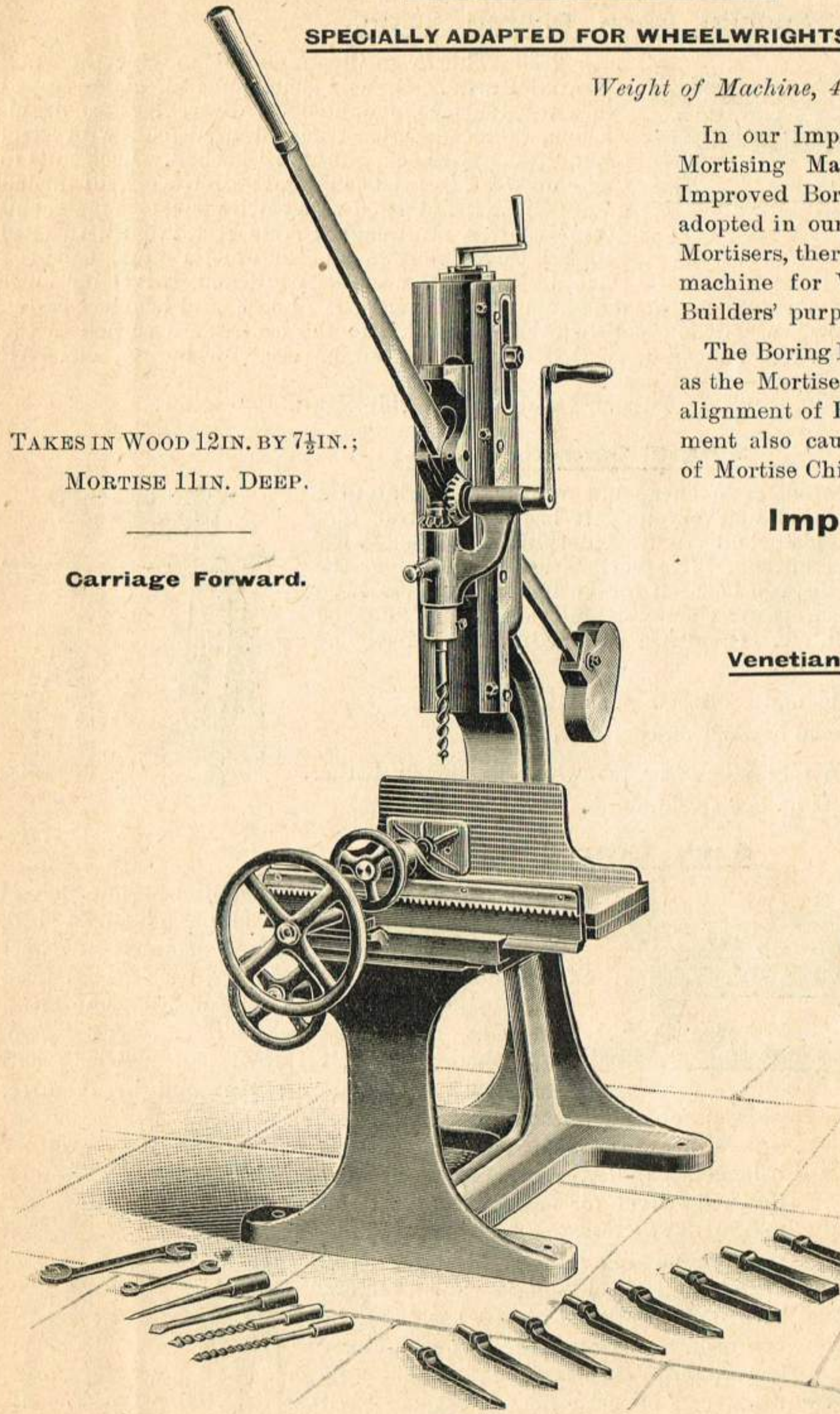
In our Improved No. 2½ Patent Centre Mortising Machine, we have added the Improved Boring Arrangement as already adopted in our No. 4 and "Eureka" Nave Mortisers, thereby making it a most suitable machine for Wheelwrights', Joiners', and Builders' purposes.

The Boring Bit is used in the same spindle as the Mortise Chisel, thus assuring perfect alignment of Boring Bit. The new arrangement also causes absolutely true reversing of Mortise Chisel, a most important feature.

TAKES IN WOOD 12IN. BY 7½IN.;
MORTISE 11IN. DEEP.

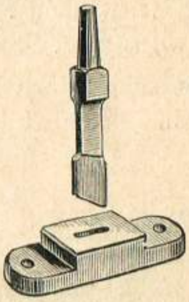
Carriage Forward.

Improved No. 2½.



2632

Venetian Blind Punch and Die.



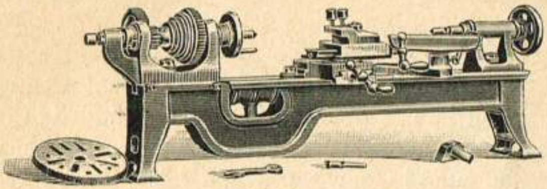
In our No. 2½ Patent Centre Motion Mortising Machine the Stand and the Upright Frame are all cast in one piece, giving great solidity and firmness, which is required in all Mortise Machines. If required for shipment we can supply the Machines in sections, like our No. 2, so as to be readily taken apart, so that when packed for shipment it occupies very little space.

Price, including $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ Best Cast Steel Chisels, 2 Core Drifters, and 2 Screw Keys, fitted with Improved Boring Arrangement with $\frac{1}{2}$, $\frac{5}{8}$, and $\frac{3}{4}$ Augers, $\frac{1}{4}$ and $\frac{5}{8}$ Cast Steel Drills	£11	10	0
,, With Self-coring instead of ordinary Chisels and Drifters, sizes as above ...	12	7	6
,, Venetian Blind Punch and Die	0	10	0

English-made Lathes.

Having had numerous enquiries from Amateurs and others for a larger variety of small-size Lathes, which, whilst low in price should be of substantial construction, we have pleasure in introducing the following patterns, all of which are exceedingly good value.

Special Back Geared Lathe.


2633

2633 This is an illustration of our **Special Back Geared Lathe.** It has a 30in. gap bed, hand-scraped to a true surface, mounted on dwarf legs to fix on bench, 3in. centre, back geared headstock with steel spindle, conical neck, gun-metal bushed. Lock nuts to take up wear, 3-speed cone and gear wheels, all turned and polished, and fitted with catch plate, face plate, and three centres. Substantial slide rest, fitted with steel square thread screws and gun-metal nuts, balanced handles, and with accurately indexed swivel for taper turning. Hand rest, with two tees, one for wood and one for iron turning. Loose head has steel barrel, and steel square thread screw, turned and polished hand wheel, and the centres are turned to the Standard Morse Taper, and sockets reamered, so that twist drills can be used for boring, etc. All Screws, Nuts, etc., are hardened where necessary.

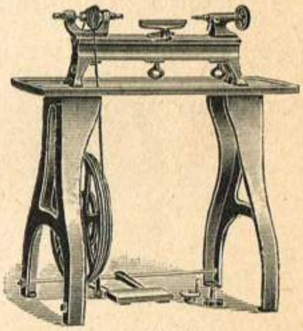
Price on Rails, £6 10s. Same Lathe with 3ft. 6in. Bed, 12/6 extra.

Single Geared Lathe.

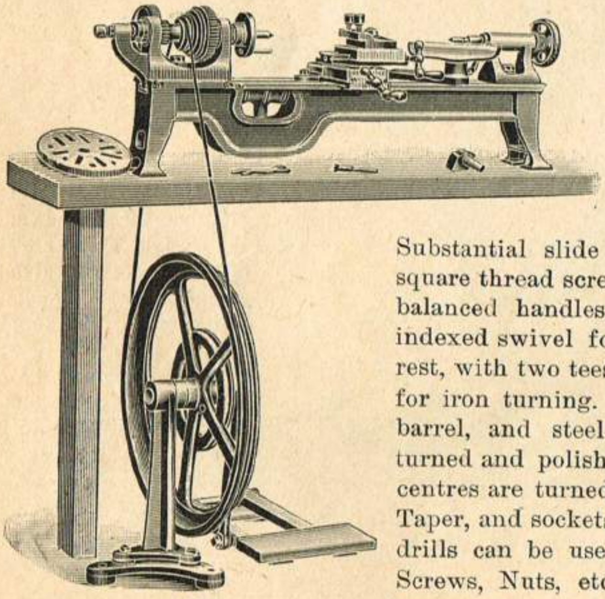
2634 This is an illustration of a cheap but well-made **Amateur's Lathe**, at a price within the reach of everyone. It has a 24in. bed, 3in. centres, 3-speed cone, catch plate and stud. The spindle is steel, with conical neck, and gun-metal bushed. The sockets are reamered to the Morse Taper, so that twist drills can be used for boring. The loose head has a steel spindle, with square thread screws, and turned and polished hand wheel, with locking bolt, etc. Hand rest supplied with two tees, one for wood and one for iron turning.

With Iron Standards and Polished Wood Tool Bench,
with 18½in. 4-Speed Fly Wheel, complete, £4 10s.

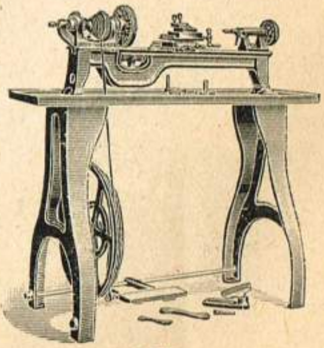
Or can be supplied without Standards or Fly wheel, as Bench Lathe, for £2 5s. Same Lathe with 30in. bed 7s. 6d. extra.


2634

Back Geared Lathes.


2635

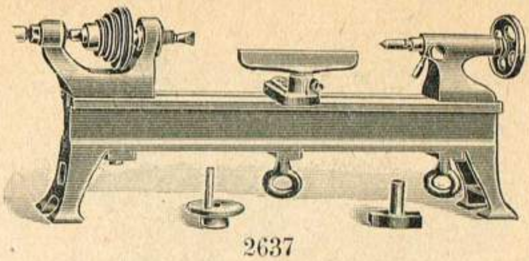
Nos. 2635 and 2636 are illustrations of our **Special Back Geared Lathes.** Each has a 30in. gap bed, hand-scraped to a true surface, mounted on dwarf legs to fix on bench, 3in. centre, back geared head stock with steel spindle, conical neck, gun-metal bushed. Lock nuts to take up wear, 3-speed cone and gear wheels, all turned and polished, and fitted with catch plate, face plate and three centres. Substantial slide rest, fitted with steel square thread screws and gun-metal nuts, balanced handles, and with accurately indexed swivel for taper turning. Hand rest, with two tees, one for wood and one for iron turning. Loose head has steel barrel, and steel square thread screw, turned and polished hand wheel, and the centres are turned to the Standard Morse Taper, and sockets reamered, so that twist drills can be used for boring, etc. All Screws, Nuts, etc., are hardened where necessary.


2636

2635 With 18½in. 4-speed fly-wheel, with treadle and frame complete (weight 170lb.) £8 0 0
Same lathe with 3ft. 6in. bed, 12s. 6d. extra.

2636 With iron standards, polished wood tool bench, 18½in. fly-wheel, and treadle complete £9 0 0
Same lathe with 3ft. 6in. bed, 25s. extra.

Single-Geared Lathe.



2637

2637 This is an illustration of a cheap but well-made amateur's Lathe, at a price within the reach of everyone. It has a 24in. bed, 3in. centres, 3-speed cone, catch-plate, and stud. The spindle is steel, with conical neck, and gun-metal bushed. The sockets are reamered to the Morse Taper, so that twist drills can be used for boring. The loose head has a steel spindle, with steel square thread screws, and turned and polished hand wheel, with locking bolt, &c. Hand rest supplied with two tees, one for wood and one for iron turning.

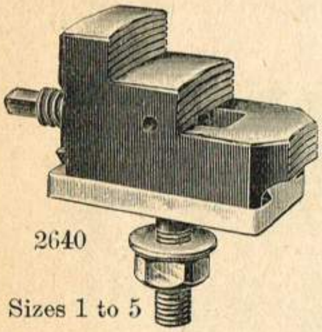
We wish to call special attention to the fact that the headstock is not now made as illustrated. The mandrel is now fitted exactly as in No. 2633—that is to say, it runs in two bearings, and the tail pin merely takes the end thrust. This arrangement adds considerably to the value of the lathe. Complete, £2 5 0

2638 Same pattern Lathe as above, but with 30in. bed. £2 12 6

2639 Special Strong Lathe, 4in. centres, back-geared headstock, fitted with new pattern 3-speed pulley, which can be used for either flat belt or round gut band; cut gears, compound slide rest, hand rest, mounted on iron standards, with iron tool tray; complete with treadle motion. £11 0 0

Patent Lathe Face-Plate Dogs.

Thousands in use throughout the country. Satisfaction guaranteed.

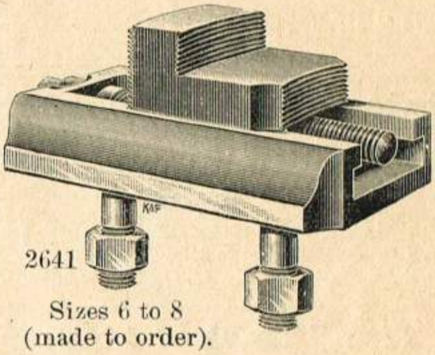


2640

Sizes 1 to 5

Any Lathe Face-Plate can be converted into a first-class independent Jaw Chuck in five minutes. No alteration is required to the face-plates. The dogs may be set at any angle to suit irregular forms of work, and their use in the workshop means an immense saving of time in setting work in the Lathe.

They cost much less than a jaw chuck, will take a greater range and variety of work, give a powerful grip, are practically unbreakable, and can be altered to suit any face-plate or machine bed.



2641

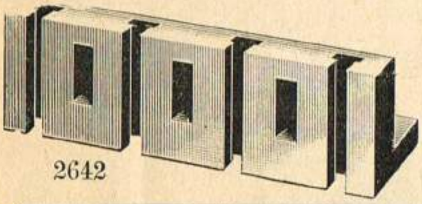
Sizes 6 to 8 (made to order).

Bolts for securing the dogs can be altered in size to suit the slots or T grooves; those given in the list are standard sizes.

Sizes and Prices.

	HEIGHT OF LATHE CENTRES.	SET OF THREE.	SET OF FOUR.	DIAMETER OF BOLT.	
		£ s. d.	£ s. d.		
No. 1	Up to 6½in. ...	2 15 0	3 6 0	½in.	Made in malleable iron, case hardened on the gripping faces. **V** grooved, machined all over, curved gripping faces, fluted, steel screws, and bolts.
,, 2	,, 8in. ...	3 10 0	4 10 0	⅝in.	
,, 3	,, 10½in. ...	4 15 0	6 0 0	¾in.	
,, 4	,, 12in. ...	6 0 0	7 17 6	⅞in.	
,, 5	,, 16in. ...	7 10 0	9 15 0	1in.	
,, 6	,, 24in.	Prices upon application.		1½in.	Heavy cast-iron bases, malleable iron jaws, curved and hardened on the gripping faces, steel screws and bolts.
,, 7	,, 30in.			1½in.	
,, 8	,, 36in.			2—1½in. Bolts	

Steel jaws can be supplied, if required, at an extra cost of 20 per cent. above list prices. One spanner provided with each set.



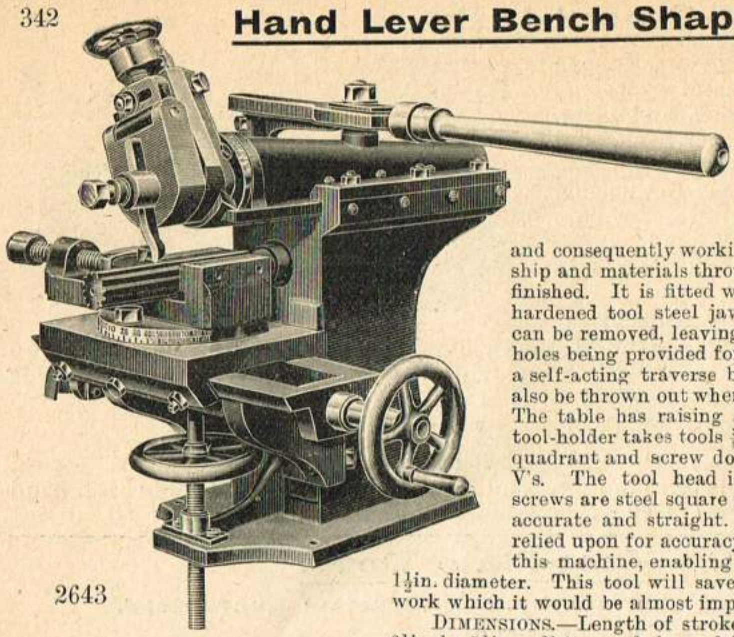
2642

Planer Angle Plates.

These are very useful appliances for holding work requiring to be planed.

	LENGTH.	BREADTH.	BREADTH.	Planed Outside and Round Edges.	Planed all over except Slots.
	A	**B**	**C**	s. d.	s. d.
No. 1	9in.	4in.	3in.	11 6	16 3
,, 2	12in.	4in.	3in.	12 9	17 3
,, 3	15in.	5in.	3¼in.	16 9	22 6
,, 4	18in.	5in.	3¼in.	21 3	27 6
,, 5	20in.	4½in.	3in.	27 6	38 0
,, 6	20in.	6in.	4in.	32 6	44 0

Hand Lever Bench Shaping Machine.



2643

2643 This machine is practically a reduced copy of the best type of power Shaping Machines, except that it is operated by a hand lever instead of crank and belt pulleys. It is a thoroughly practical little tool, and will do a great variety of work, taking a good stiff cut, and leaving a very finished surface. It is especially suitable for model-engine making, or microscopic work. It is very easy to work, both slides of the ram being of square section, and consequently working with the least possible friction. The workmanship and materials throughout are of the highest class, and it is very highly finished. It is fitted with a machine vice, swivelling to any angle, with hardened tool steel jaws, one of which swivels for taper work. The vice can be removed, leaving the table clear for clamping work to, ⅜in. screwed holes being provided for this purpose. The table, with or without vice, has a self-acting traverse both to right and left. The catch-plate of this can also be thrown out when desired, and the table operated by the hand wheel. The table has raising and lowering screw operated by hand wheel. The tool-holder takes tools ⅜in. by ½in., and has hinge movement and secondary quadrant and screw downward feed, operated by a hand wheel for cutting V's. The tool head is made to swivel for this purpose. All operating screws are steel square thread ; all slides are hand-scraped to a fit, and are accurate and straight. The work done in this machine can therefore be relied upon for accuracy. A hole is formed clear through the box body of this machine, enabling keyways, &c., to be cut in any length shaft up to 1½in. diameter. This tool will save its cost in files in a very short time, besides doing work which it would be almost impossible to do accurately with the file or chipping.

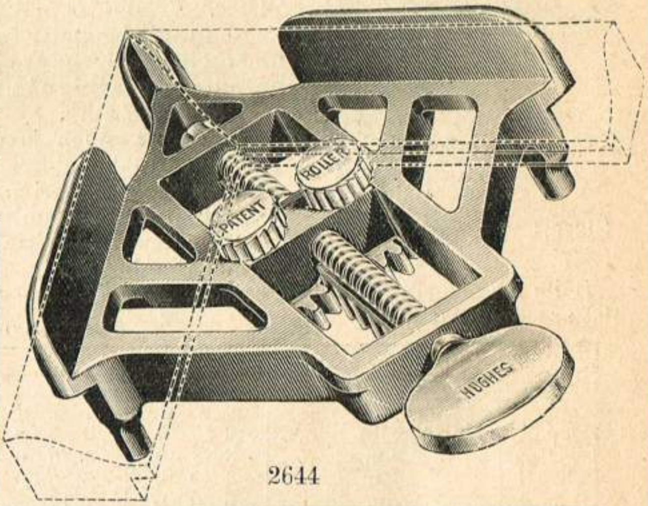
DIMENSIONS.—Length of stroke of ram, 7in. ; length of travel, 7in. ; size of table, 6½in. by 5½in. ; distance of rise and fall of table, 4½in. ; distance between tool and table, up to 4½in. ; distance between tool and vice, up to 3in. ; breadth of vice jaws, 2¾in. ; work admitted between jaws, up to 2½in.

PRICE.—Including Vice, 3 Tools, Spanner, and Tommy for Vice, £8.

Patent "Roller" Corner Cramp.

2644 This improved Cramp bids fair, we think, to displace most of the cramps now on the market. It makes a thoroughly tight joint, the mouldings being drawn firmly together by the action of the ribbed rollers. The drawing shows the mechanism of the Cramp, which is extremely simple and strong.

	s.	d.
No. 1 takes mouldings to 2¼in.	3	0
No. 2 " " " 4in.	4	0

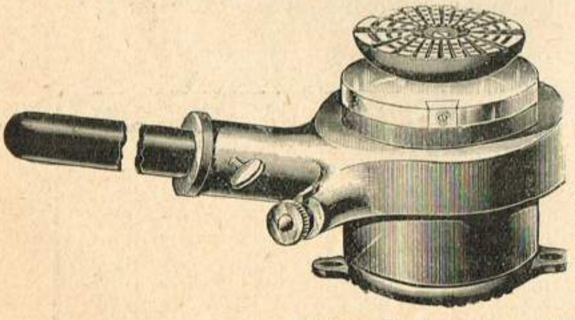


2644

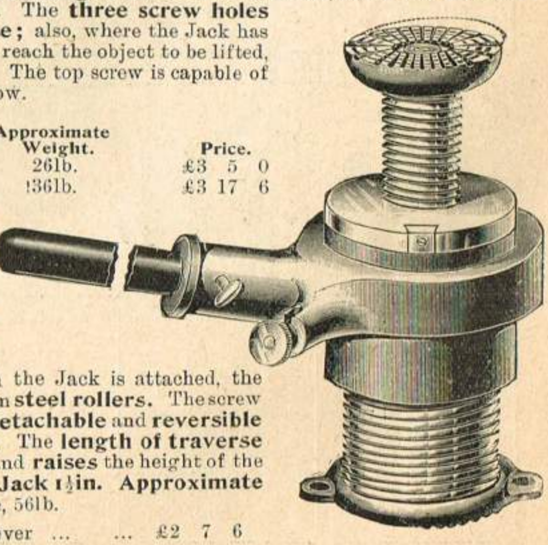
The "Tower" Lifting Jack.

2645 This tool has been specially designed and patented to meet the demand for a Lifting Jack which, while having a **minimum height** when down, will give a **substantial lifting range.** The principle of construction is that of a right and left hand screw, the body being revolved by means of a ratchet **simultaneously** operating upon and raising or lowering **both** screws. The ratchet is fitted with **one** clutch only, which is reversible for raising or lowering. The **screws** are fitted with **stops**, which prevent them working out when raised to their fullest extent. The tool is **accurately** and **substantially** made, and is capable of the most **speedy** and **simple** handling. One of the **principal** features of this tool is that the Cap **adjusts** itself to **any unevenness** of the **ground,** or **work** to be raised, to the **extent of 1½in. to the foot,** thus ensuring the weight being **dead central,** and also preventing any **skidding** of the Jack when in use, which is a **distinct** advantage **not** possessed by Jacks fitted with the ordinary revolving Cap. The **three screw holes** on the base of the Jack serve to **attach it to the traversing base;** also, where the Jack has the **necessary lifting range** but is **not high enough,** when down, to reach the object to be lifted, a wood base or block can be attached to raise it to the height required. The top screw is capable of being raised or adjusted to the object to be lifted to the extent given below.

Size.	Height when down.	Extent of Adjustment of Top Screw by hand.	Height when fully raised.	Lifting range.	Approximate Weight.	Price.
No. 1	5¼in.	1in.	11¾in.	6½in.	26lb.	£3 5 0
No. 2	8¼in.	1¾in.	20in.	10in.	36lb.	£3 17 6



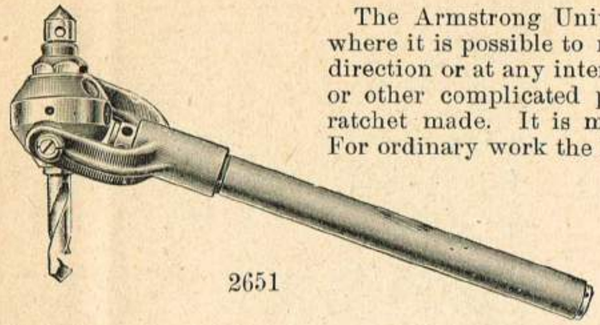
The **Traversing Base,** which is made of best malleable iron, is fitted with a **steel screw** working the saddle to which the Jack is attached, the saddle moving on **steel rollers.** The screw is worked by a **detachable** and **reversible ratchet lever.** The **length of traverse** is **12in. clear** and **raises** the height of the **No. 1 or No. 2 Jack 1½in. Approximate weight** of base, 56lb.



Price of Base complete, with Ratchet and Lever £2 7 6

The Armstrong Universal Ratchet.

Especially adapted to Drilling Holes in Cramped Places.

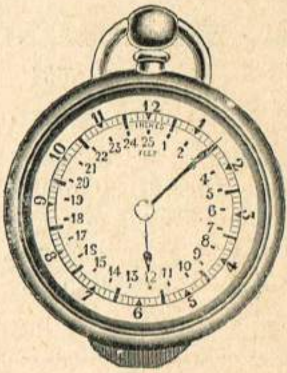

2651

The Armstrong Universal Ratchet will drive a drill in any position where it is possible to move the handle either in a vertical or horizontal direction or at any intermediate angle. It has no ball joints, bevel gears, or other complicated parts. It is stronger and faster than any other ratchet made. It is most useful where the ordinary ratchet is useless. For ordinary work the handle can be rigidly fixed, almost instantly. Its use will often save the great expense and loss of time incident to the disconnection of heavy machinery for needed repairs. When the other ratchets you have are useless for lack of room to move the handle, get an "Armstrong Universal" and it will do the job.

Two inches of motion at end of handle in any direction will drive the drill. Adopted by the U.S. Navy. Used by sixty railroads.

Made in two sizes, No. 4, Drills up to 1in.	... ...	£2	15	0
No. 6, „ „ „ 2in.	... ...	£4	0	0

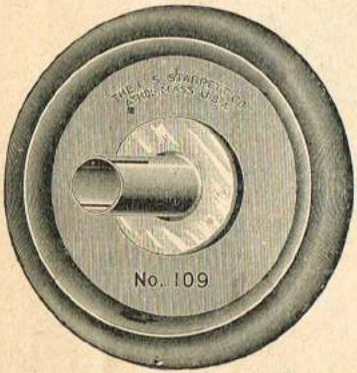
The Improved Rotameter.

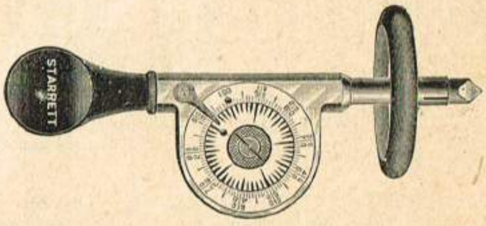

2652

An instrument for measuring the surface speed of any revolving object, reading direct in feet and inches. Especially useful for measuring the cutting speeds of Lathes and other Machine Tools, enabling the machine to be always run at the right speed for the particular piece of work being operated upon. Every good engineer appreciates the importance of this, both as regards economy of working and finish of work.

Price, with Card Dial	... ...	7s. 6d.
„ „ Enamelled Dial	... ...	8s. 6d.

Surface Speed Attachment for Speed Indicators.


THE L. S. STARRETT CO. ATHOL MASS U.S.A.
No. 109
2653



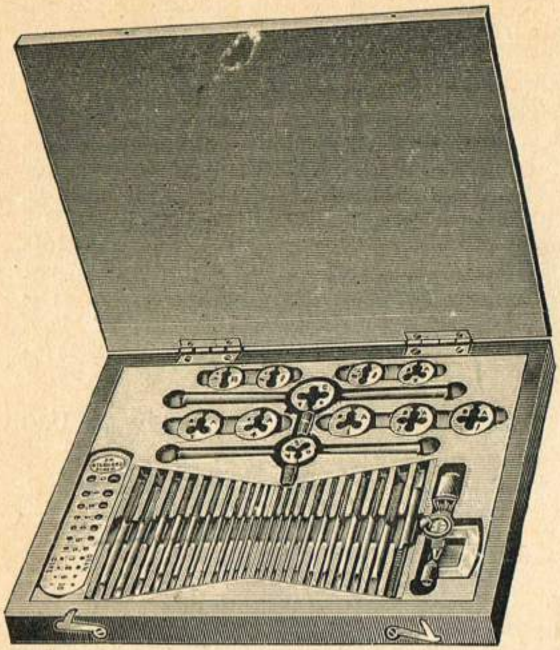
Showing attachment in use on a No. 107 Indicator.

A most useful attachment which, when used on any ordinary Speed Indicator, gives the surface speed of any revolving object. The rubbered edge of the wheel is held against the Pulley, Shafting, or other revolving object, and the reading of the Indicator, multiplied by 2, gives the surface speed in feet. This is a most useful attachment, filling a long-felt want, and although not guaranteed to give an *absolutely* correct reading, it is sufficiently accurate for everyday purposes, while its price is such that no one need hesitate over the outlay.

Price of Attachment only ... ... 2s. 6d.

For speed Indicators suitable for use with this attachment, see page 173.

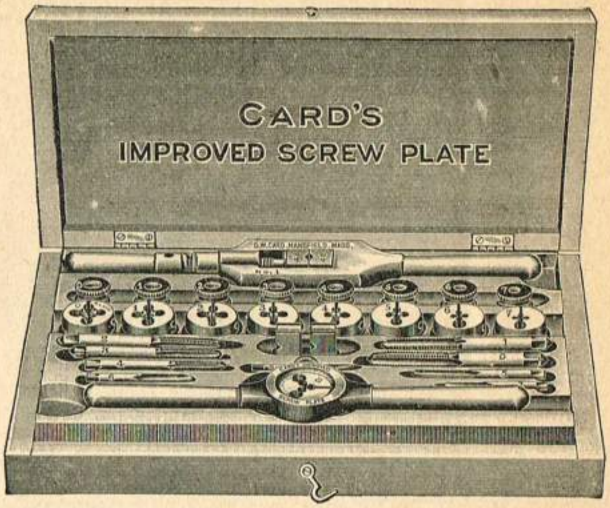
B. A. Stocks and Dies in Cases.



2654

London-made Case of B.A. Stocks and Dies, containing two Die-stocks and Circular Adjustable Dies, No. 0 to 10. Best Fluted Taps, Plug, and Taper, to each size, N.P. Micrometer, and a Drill Gauge, giving Screwing and Tapping sizes 0 to 10.

Complete in Case as illustrated £3 10 6.



2655

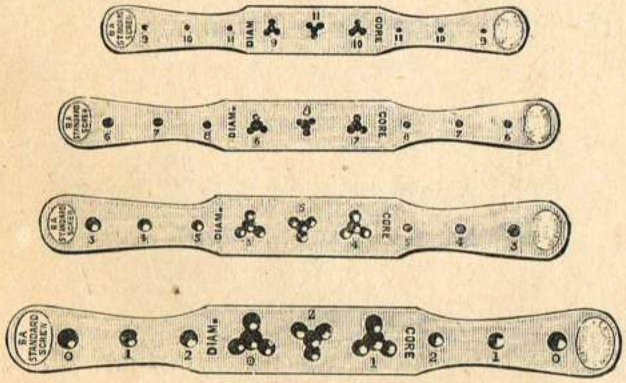
2655 Card's Improved B.A. Set. Nos. 0 to 8 with Guides, one Tap to each size, and Tap Wrench as shown.

Complete in Case £2 18 6.

2655A Case similar to above, but Nos. 9 to 14, and without Guides (these not being required on fine threads).

Price £1 14 0.

B. A. Screw Plates.



2656

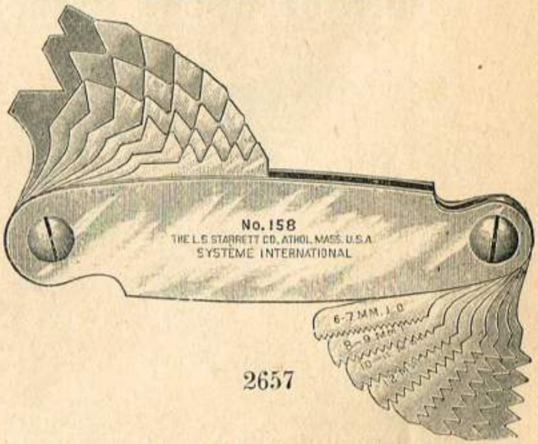
Set of 4 London-made Screw Plates, with one Cutting Hole and two Gauge Holes to each Size, Nos. 0 to 11.

Price (without Taps) 18/- the Set.

Single Plates as above, 0, 1 and 2; 3, 4 and 5; 6, 7 and 8; and 9, 10 and 11. 4/6 each.

Taps extra, as on page 198.

Universal Standard Screw Pitch Gauge.

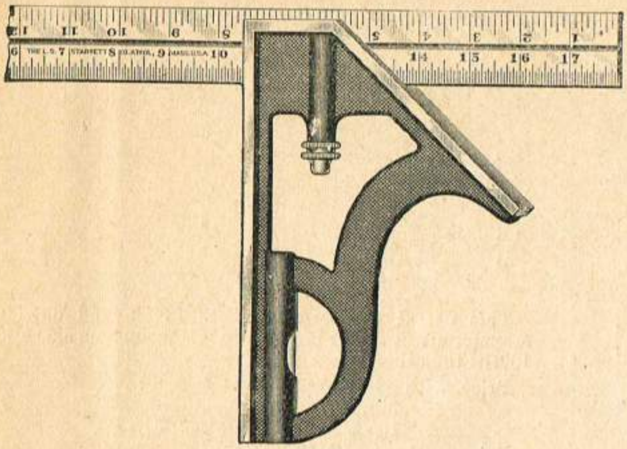

No. 158
THE L.S. STARRETT CO. ATHOL, MASS. U.S.A.
SYSTEME INTERNATIONAL

2657

Made after the French system, adopted by the Society for the Encouragement of National Industries. Pitches, 1, 1·25, 1·50, 1·75, 2, 2·5, 3, 3·5, 4, 4·5, 5, 5·5, and 6 m/m. Also contains a Centre Gauge, with one fine and one coarse notch, for getting correct angle on thread tools.

Price 4/3

Starrett's New Combination Square, No. 8.



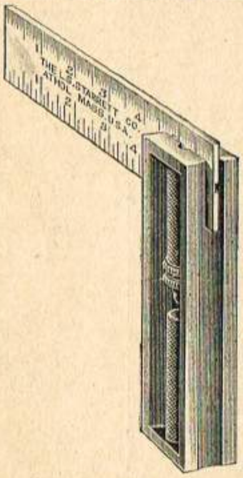
2658

This is a similar tool to Square No. 11, shown on page 164, but is much larger and heavier, being designed for use on large work. The blade is of *hardened steel.* No centre head is made for this tool.

Price with 18in. Blade, 21/-.
,, 24in. Blade, 25/-.

Special Note.—Starrett's Combination Squares, &c., &c., Nos. 9, 10, 11, 12, 13, and 14 (pages 164 and 165), are now sent out with **Hardened Blades** without any advance in price. This improvement is really equal to a substantial reduction in price, as the value of the tools is much increased.

Starrett's Adjustable Square, No. 13 G.

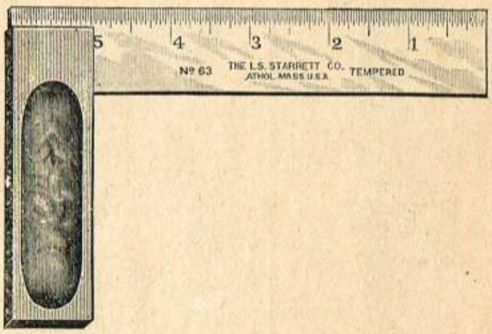


2659

A similar Square to No. 13, page 165, but with the stock grooved out (as shown in illustration) to enable the tool to be used on round surfaces. This is a most important improvement, and greatly increases the usefulness of the Square. The Bevel Blade, illustrated with No. 13 Square, is also supplied with No. 13 G (if required) in the 4in. and 6in. sizes only.

	4in.	6in.	9in.	12in.	
Price	6/3	9/6	14/6	18/9	with one Blade.
,,	8/-	12/-	—	—	with two Blades.

Starrett's Hardened Square, No. 63.


Nº 63
THE L.S. STARRETT CO. ATHOL MASS U.S.A.
TEMPERED

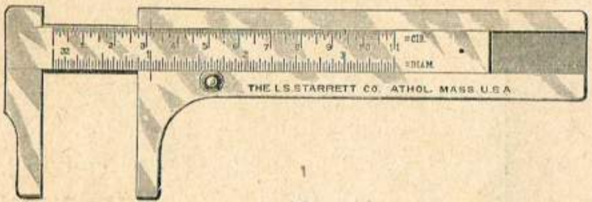
2660

The stock of this Square is case-hardened, and is grooved out in such a manner as to give a secure and comfortable grip, and at the same time to make the tool light in weight without weakening it. The Blade is of hardened steel, and is graduated in 32nds on one side, and in 64ths on the other. We anticipate a large demand for this Square, as we consider it one of the most convenient tools we have seen.

	2in.	3in.	4in.	6in.	9in.	12in.
Price	6/3	8/6	10/6	14/6	23/-	27/-

Starrett's Slide Rule Calliper and Circumference Gauge,

No. 424.



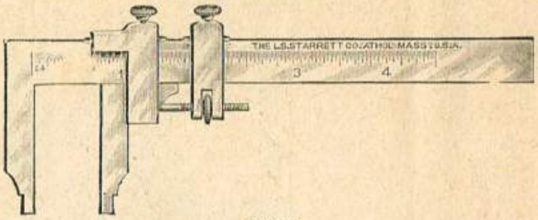
2661

Capacity $3\frac{1}{2}$in. Jaws $1\frac{5}{16}$in. long, enabling any round object up to $2\frac{1}{2}$in. diameter to be callipered and its circumference gauged. The standard marking is in 32nds, and the circumference measure is in 16ths. All corners are rounded, making the tool very convenient for the pocket.

Price 14/6.

Starrett's Calliper Square,

No. 426.



2662

This useful calliper gives both inside and outside measurements, and is marked in 64ths on one side and 100ths the other.

Price, with adjusting screw as shown :

3in.	4in.	6in.
16/-	18/9	31/-

Price, without adjusting screw :

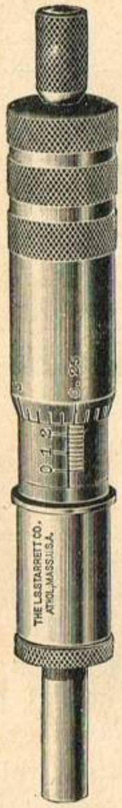
3in.	4in.	6in.
12/6	14/6	23/-

Hardened jaws, 6/3 extra.

Leatherette case, 3/- extra.

Micrometer Head,

No. 263.



2663

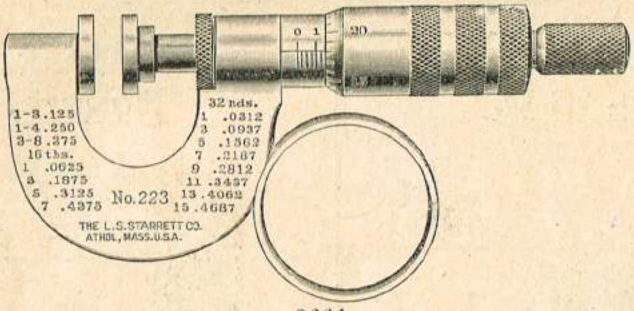
Illustration full size.

These heads are easily attached to machines or tools wherever accurate measurements are required. Ratchet stop. Graduated to read 1000ths. Lock nut.

Price 14/6.

Paper Gauge Micrometer,

No. 223.



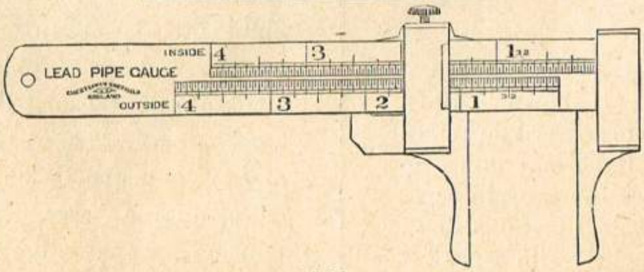
2664

This instrument is specially designed for measuring paper, rubber, and other compressible substances, the large discs enabling a true reading to be made. Measures all sizes less than $\frac{11}{32}$in. by 1000ths.

Price, without ratchet stop and ring, and without case, 27/-.
With case, 29/-.

Price, with ratchet stop and ring, and without case, 29/-.
With case, 31/6.

Lead Pipe Gauge.

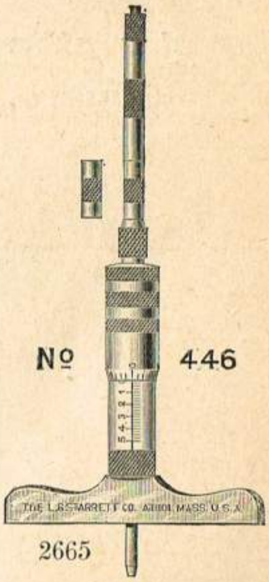


2666

Gives the weight in lbs. per yard of any lead pipe by taking inside and outside measurements. Most useful for architects, clerks of works, etc.

Price 7/6.

Micrometer Depth Gauge.



2665

Screw has a movement of $\frac{1}{2}$in., reading by 1000ths, and with two $\frac{1}{2}$in. and one 1in. standard collars to slip on and off the spindle, a range of $2\frac{1}{2}$in. is obtained. The split nut is covered by patent graduated sleeve and protected from dirt and injury. A means of taking up wear, and adjusting to show an accurate reading, is also provided. Size of head is $\frac{3}{16}$in. by $2\frac{3}{8}$in. This and the point of screw are carefully hardened. Head has knurled set screw for locking.

Price 18/9. Case 2/3 extra.

New Pattern Plumb Bob, No. 87.

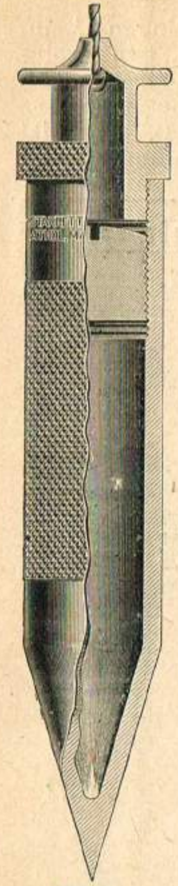
Made from solid steel, bored out and filled with mercury. The noteworthy features of this Plumb Bob are: its great weight in proportion to size, its low centre of gravity, and its small diameter. It has a hardened and ground point, and knurled body, and is provided with a simple and effective device for fastening end of line.

2667	Size	4 by $\frac{1}{2}$	5 by $\frac{5}{8}$	$5\frac{1}{2}$ by $\frac{7}{8}$	6 by 1in.
	Weight	$3\frac{1}{2}$	6	12	16oz.
	Price	4/3	6/3	8/6	10/6

All Steel Plumb Bob, No. 177.

Similar in appearance to the one described above, but solid steel.

2668	Size	4 by $\frac{1}{2}$	5 by $\frac{5}{8}$	$5\frac{1}{2}$ by $\frac{7}{8}$	6 by 1in.
	Weight	$2\frac{3}{4}$	5	$8\frac{1}{2}$	$14\frac{1}{2}$oz.
	Price	3/3	4/3	6/3	8/6

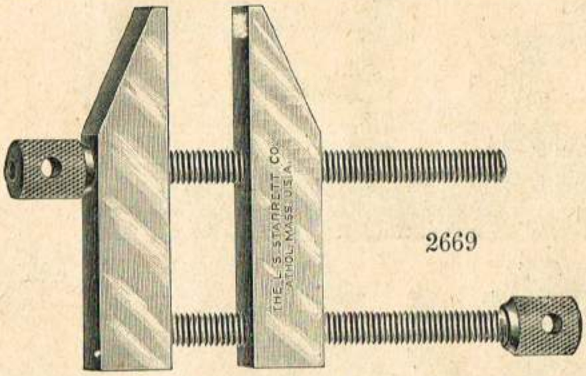


2667

THE L.S. STARRETT CO. ATHOL MASS. U.S.A.

2668

Tool Makers' Parallel Clamps.

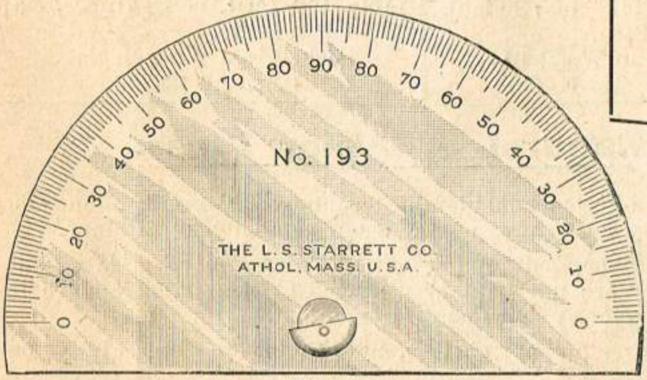

THE L. S. STARRETT CO. ATHOL, MASS. U.S.A.

2669

Made of steel throughout, and case-hardened. Extremely useful for many fitting jobs.

Size	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$in.
Length of Jaws	2	$2\frac{1}{2}$	3	4in.
Price	5/3	6/3	7/6	8/6 per pair.

Protractor, No. 193.

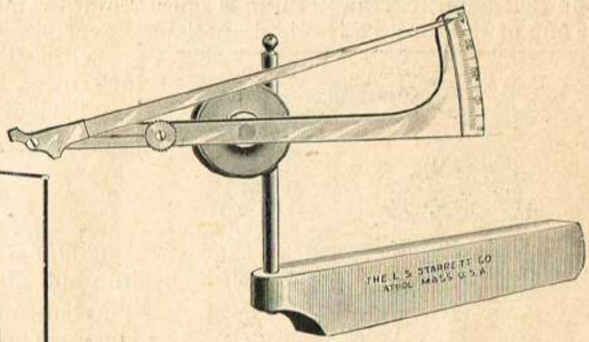


2670

A handy and inexpensive instrument which, when used with an ordinary bevel (such as those shown on page 165), forms an excellent Bevel Protractor. By its use the Bevel can be set to any angle with the greatest ease, and with perfect accuracy.

Price 4/6.

Universal Lathe Test Indicator, No. 64.

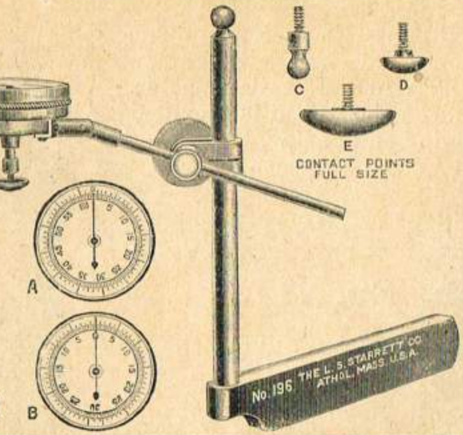

THE L. S. STARRETT CO ATHOL MASS U.S.A.

2671

This indicator is made to clamp on to a rod of any size up to $\frac{3}{8}$in., flat or round. Can be conveniently used on the needle of a Surface Gauge. A special Holder is also provided for use in Tool Post of Lathe. The needle head has three contact points, all at the same distance from the fulcrum. Graduated to read in 1000ths.

Indicator only, 10/6.
Tool Post Holder, 2/-. Complete, 12/-.

Universal Dial Lathe Test Indicator.—No. 196.



2672

An extremely sensitive instrument, indicating to $\frac{1}{2000}$in. One revolution of the pointer indicates $\frac{1}{16}$in., two revolutions $\frac{1}{8}$in., which is the limit of capacity of the instrument. The dial may be had marked up to 62½ (thousandths), as shown at A ; or to 31¼ right and left, as at B. The dial in either case has 125 graduations, each thousandth being divided into halves.

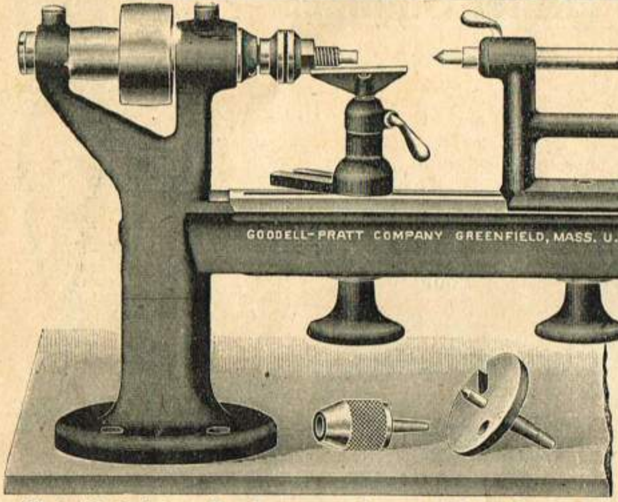
Price, style A or B, with three contact points ... £1 9 6

Tool Post Holder, as illustrated, *extra*, 2s. 3d.

Surface Gauge Sleeve, *extra*, 3s. 0d.

Extra contact points, each, 5d.

Polishing Lathe.—No. 29G.


GOODELL-PRATT COMPANY GREENFIELD, MASS. U.S.A.

2673

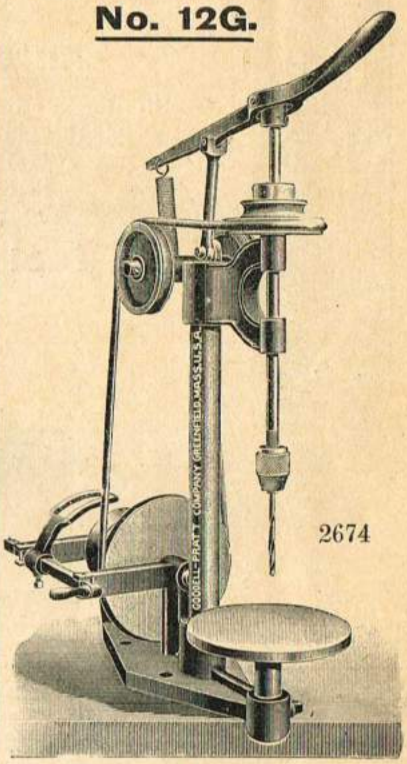
This Polishing Lathe, complete with tail stock, tee rest, faceplate, saw arbor, and three-jawed chuck (capacity, 0 to $\frac{5}{32}$in.), admits of a large variety of polishing, grinding, and other kindred operations not possible upon the ordinary styles of plain Polishing Heads. It is furnished complete with the attachments as shown ; the Bed is milled, the Spindle is hollow, and the machine altogether is one of the most convenient appliances ever placed on the market. Bed is 12in. long ; height of centres, 2½in.

Packed in Wood Box.

Price £1 8s. 6d.

Power Bench Drill.

No. 12G.


GOODELL-PRATT COMPANY GREENFIELD, MASS. U.S.A.

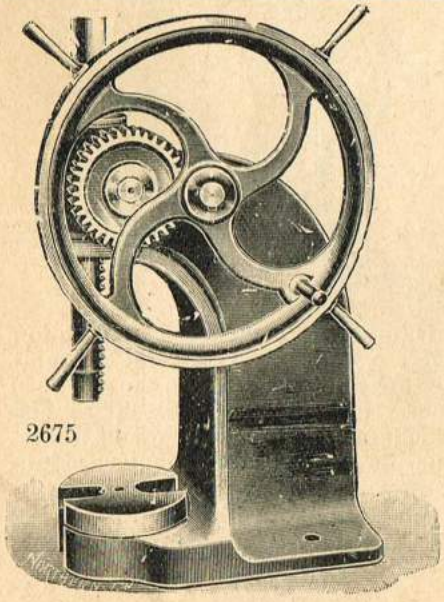
2674

This machine has been constructed to meet the demand for a Sensitive Bench Drill of good quality at a moderate price. It is provided with a three-jawed chuck (capacity 0 to ¼in.), adjustable table, top feed, belt shipper, &c., as in illustration.

Packed in a Wooden Box.

Price £2 16s. 6d.

Mandrel or Arbor Press.



2675

This tool effects a considerable economy by forcing Mandrels into holes by steady pressure, as against driving by hammer.

Arbors are pressed in and out of holes easier, quicker, and truer. They are not bent or damaged at their ends, and their life is consequently considerably extended.

Their centres are not choked, and the dogs need not always be taken off.

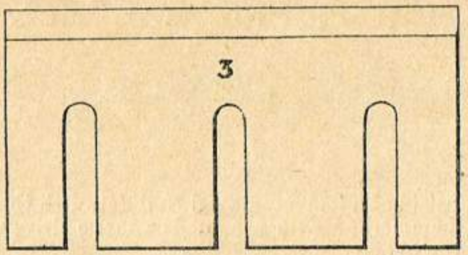
Finished work is not marked or damaged.

These economies soon pay the cost of the tool.

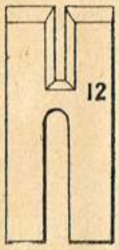
It admits wheels up to 12in. diameter. Distance from ram to press-plate, 13in. Diameter of ram, 2in. Weight, 2cwt.

Price as shown, geared, to drive 2in. Arbors ...	£8 5 0
Price, not geared, to drive 1in. Arbors	£5 0 0

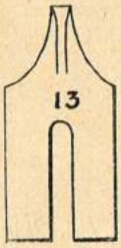
Machine Plane Irons.



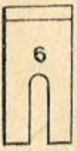
Best C. S. Plane Irons, ordinary thicknesses and widths, 9d. per inch.



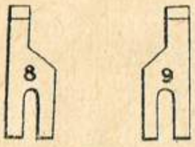
Tongueing.



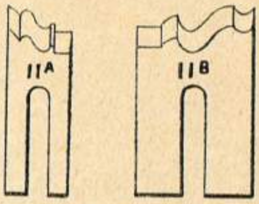
Grooving.



Rebate.



Side.



Moulding.

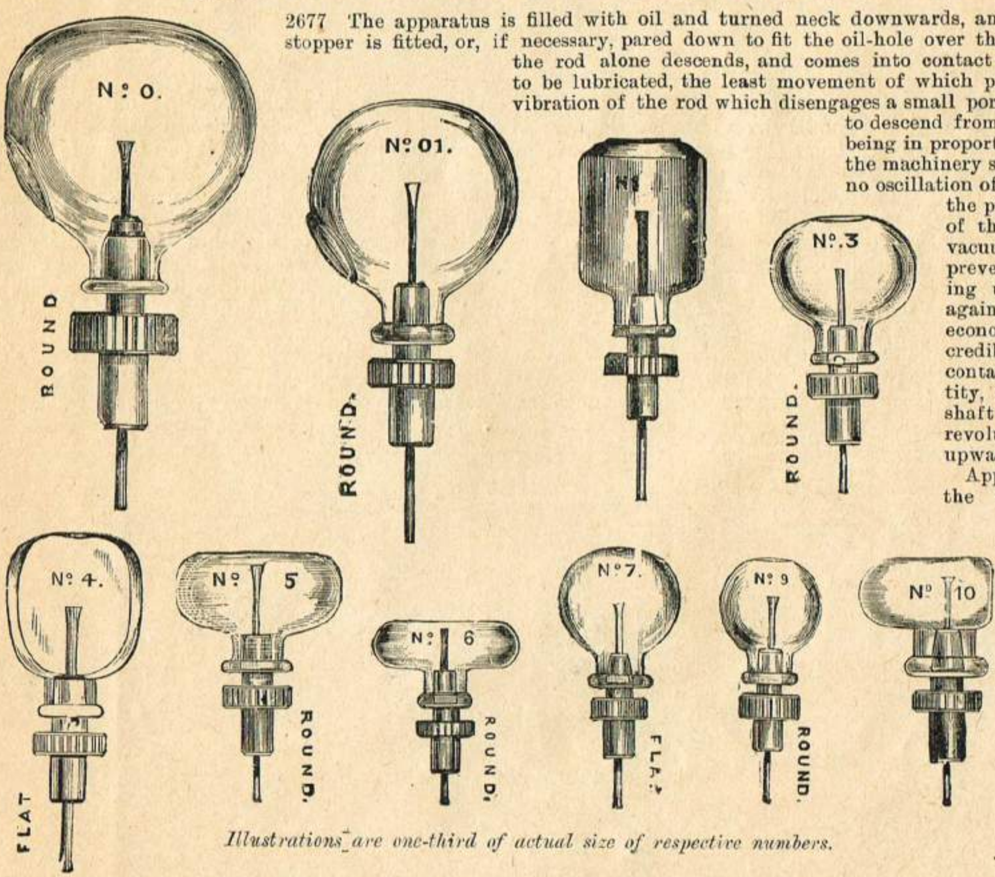
2676 Best C. S. Machine Irons. Tongueing, 1/1 per in.; Grooving, 1/8 per in.; Rebate, 1/1 per in.; Side, 1/1 per in.; Moulding (ordinary patterns), 1/8 per in. All Irons measured extreme width. Sizes under 1½in. are charged as 1½in., and are not recommended, as if made too narrow they are liable to break at end of slot.

When ordering, the following particulars should be given :—Width of cutting edge; extreme length; thickness; width of slot. We shall always be pleased to quote specially for any goods of this description to customers' specifications.

"Needle" Lubricators.

Lubrication ensured without HEATING the bearings first as in most Grease Lubricators.

2677 The apparatus is filled with oil and turned neck downwards, and the lower end of the stopper is fitted, or, if necessary, pared down to fit the oil-hole over the bearing of the shaft; the rod alone descends, and comes into contact with the parts requiring to be lubricated, the least movement of which produces an oscillation or vibration of the rod which disengages a small portion of oil, and causes it to descend from the globe, the quantity being in proportion to the speed. When the machinery stops, or is not in motion, no oscillation of the rod takes place, and the pressure of air at the base of the tube, also the partial vacuum formed in the globe, prevents the oil from descending until the machinery is again set in motion. Its economy in saving of oil is incredible; an ordinary globe, containing but a small quantity, will lubricate a small shaft turning 150 to 200 revolutions per minute for upwards of a month.



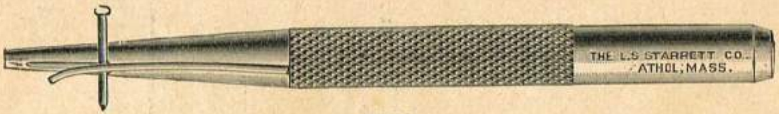
Illustrations are one-third of actual size of respective numbers.

Approximate capacity of the respective numbers in Liquid Measure:—No. 1, 2oz.; No. 2, 1½oz.; No. 3, 1½oz.; No. 4, 1oz.; No. 5, 1¼oz.; No. 6, ½oz.; No. 7, ½oz.; No. 8, ¾oz.; No. 9, ½oz.; No. 10, ⅞oz.

NOTE.—Should the oil descend too freely, in consequence of the Lubricator being fixed in a high temperature, or other cause, the feed rod should be replaced by a thicker one; or, on the contrary, if insufficiently, the rod should be slightly filed on one side, or a thinner one substituted. These alterations are rarely necessary. The rods should be clean and free from rust before putting the Lubricator to work.

2677 PRICES :—Nos. 1 to 10, inclusive, 5d. each. The largest size, No. 0, 10d. each. No. 01, 8d. each.

Patent Nail Holder and Set. No. 119.

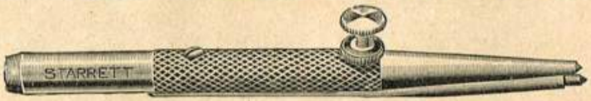

THE L.S STARRETT CO.
ATHOL, MASS.

2678

This handy little instrument consists of a tempered steel Nail Set, with the addition of a spring at side for holding brads to start them with the hammer. By its use brads can be driven easily in corners inaccessible for the hands, without danger of pounding the fingers.

Price 1/6 each.

Spacing Centre Punch. No. 118.

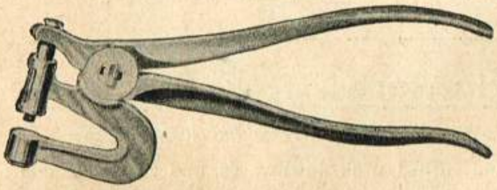


2679

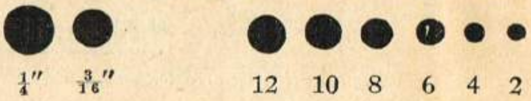
Just the thing for laying off work quickly and accurately, for drilling, cutting out dies, etc. The punch is solid, made from best tool steel, and properly tempered. The guide point is set in a socket, with a spiral spring to press it down. The screw with check-nut sets the spacing point to required distance.

Price 2/9.

Patent Lock-Lever Belt Punch.



Sizes of tubes for 10in. **Sizes of tubes for 8in.**



2680

This Punch is made in two sizes, 8in. and 10in.

The 10in. Punch is the most powerful punch on the market, besides carrying the largest tubes (cutting a hole $\frac{1}{4}$in. in diameter, large enough for $\frac{3}{8}$in. lace), and having the deepest reach of any punch ever introduced. Where two rows of holes are required in large belts this punch is without equal, having a reach of $1\frac{3}{4}$in. It can be operated on $\frac{3}{8}$in. stock with more ease than any other punch with tube but half as large on $\frac{3}{16}$in. stock. It has a cutting-block $\frac{5}{8}$in. deep which, being threaded and slotted, can be screwed up and filed clean whenever it becomes deeply cut.

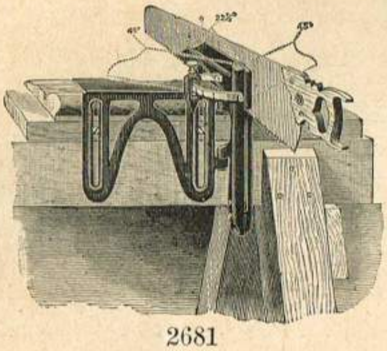
The 8in. Punch carries tubes from $\frac{3}{16}$in. down to No. 2. Compared with a revolving punch, it has a reach $\frac{3}{8}$in. deeper; has an opening between the cutting-block and tube nearly $\frac{1}{8}$in. greater; works with a lever, and is $\frac{3}{4}$in. shorter between the pivot and tube and, although the entire punch is $1\frac{3}{4}$in. shorter than a revolving punch, yet it has handles of the same length as the latter. It has a threaded and slotted cutting-block $\frac{1}{2}$in. deep. All these points combined make it the most successful saddlers' tool ever made, requiring but one-third as much pressure to put it through leather as is necessary to operate a revolving punch.

As shown in the cut, this punch has a lock-joint, by which is meant that by giving the screw a quarter turn the punch can be opened and the tube removed, all of which requires but five or ten seconds.

One glance at the tool itself will convince anyone that it is the most successful belt punch ever introduced.

10in., 3/6. Extra Tubes for 10in., 9d. each. 8in., 2/6. Extra Tubes for 8in., 8d. each.

New Pattern Mitre Box.

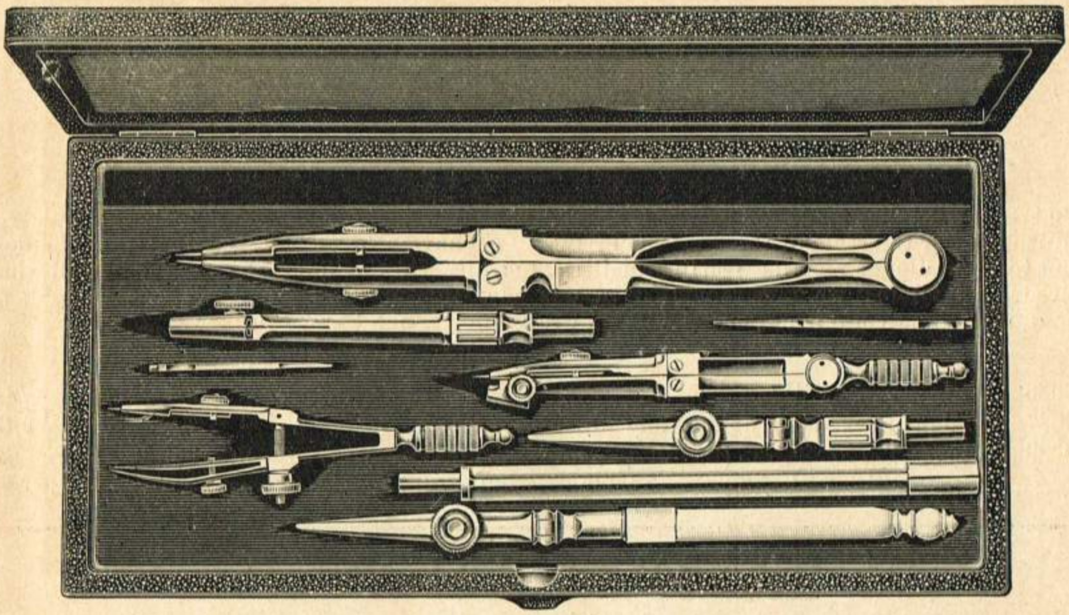


2681

Can be used with any hand or panel saw. Adjustable to any angle. Made of iron and steel. Weight only two pounds. The appliance should be attached to a board as shown for cutting mouldings, but for cutting square stuff it can be used alone.

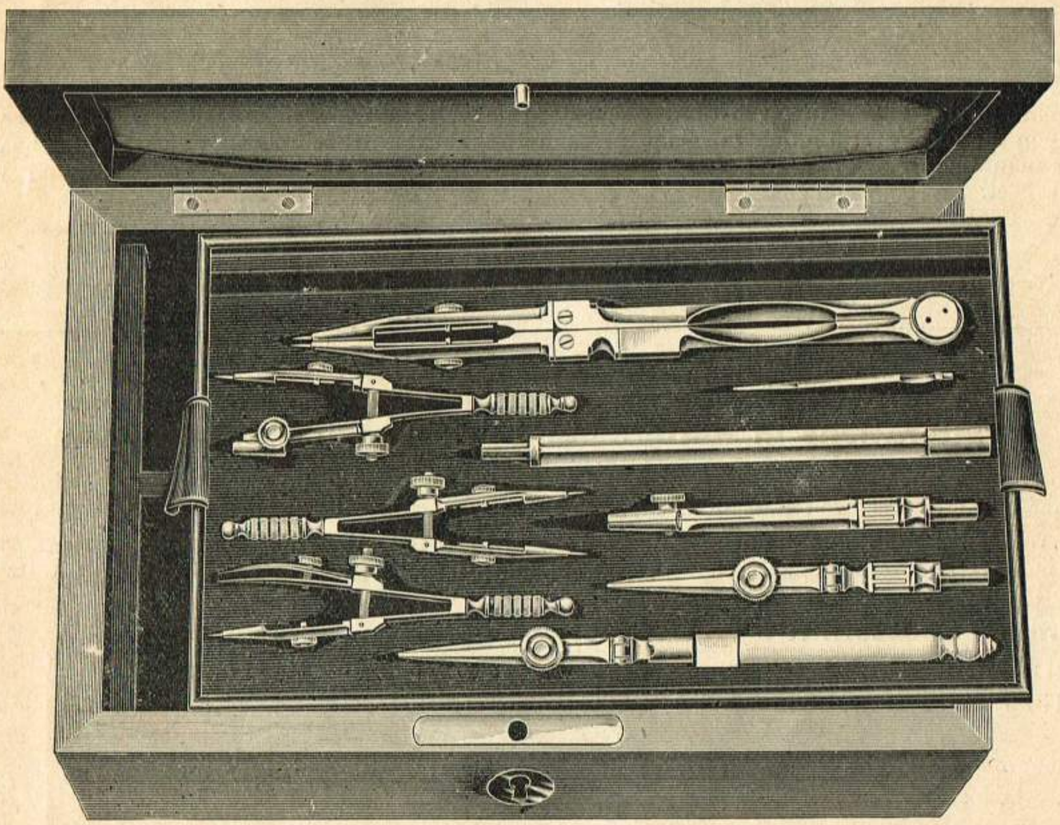
Price 6/6.

Best London-made Drawing Instruments.



2682 Lock-up Case, Oak or Walnut, containing G.S. Instruments as illustrated, Nut and Bolt Needle Points, Hinged Nibs to Pens. Finest Finish throughout. Price 26/-.

2683 Leatherette-Covered Pocket Case, containing same Instruments as above. Price 22/6.



2684 Lock-up Case, Oak or Walnut, containing G.S. Instruments as shown, Nut and Bolt Needle Points. Hinged Nibs to Pens. Finest Finish throughout. Price 28/6.

2685 Leatherette-Covered Pocket Case, containing same Instruments as above. Price 25/-.

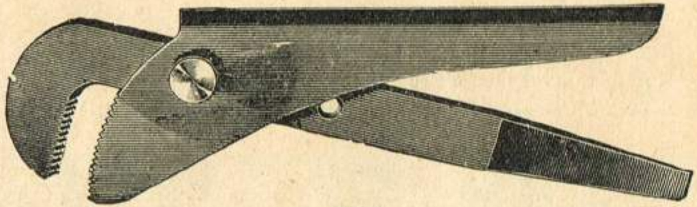
Special Quality Hand Saws.

We are now having made for us a special quality of Saws, of the very best material and workmanship, finished after the style of the American Saws. We have always believed that the Sheffield Saws were not to be beaten as regards wearing qualities, but hitherto the finish has not been all that could be desired. This defect we have remedied in our new line of Saws, and we put these before our customers with great confidence, anticipating a ready sale. Each Saw is fully warranted.

		22	24	26	28in.
2686	Skew Back, as illustrated	5/-	5/6	5/9	6/9
2687	Straight Back, same quality and finish	4/9	5/3	5/6	6/6

2688 Set of Three Saws (keyhole, compass, and table), to fit one handle, very best quality and finish. Sheffield make ... ... 2/9 per set.

Universal Adjustable Wrench.



2689

We are having a large quantity of Wrenches of this well-known pattern made for us, and are putting them upon the market at a much lower price than they have hitherto been offered at. They are of English manufacture, of best material throughout, and we both recommend and guarantee them in every respect.

6	7	9	12	14	16in.
10d.	1/3	1/6	2/6	3/3	5/3 each.

The above will take the place of No. 1874, which we shall not repeat when present stock is exhausted.

SPECIAL NOTES.

Alterations in Patterns and Prices, Withdrawals, etc.

Brown & Sharp's **Bevel Protractor,** No. 1621, has been improved by the addition of a vernier, reading to one-twelfth of a degree. No alteration has been made in the price of the tool.

We regret being obliged to advance the price of **Little Giant Drilling Machines,** Page 274. No. 5 is now 45/-, and No. D5 is 40/-. The machines, however, are still excellent value at the advanced figure.

Bindley's Automatic Wrenches, No. 1864, are no longer made.

Self-Skimming Ladles, No. 2426, are no longer made.

All Shafting, Pulleys, Plummer Blocks, etc., Pages 295 to 300 inclusive, are quoted *Carriage Forward.*

	To 2½in.	2½ to 6in.	Over 6in.
Price of Level Tubes (best proved)	2½d. each.	1d. per inch.	3d. per inch.

Pianoforte Maker's Brace, No. 71. This Brace has not ball-bearing to head.

Ilsley's Patent Tool Grinding Appliance, Page 62. The wooden casing shown in illustration is not included with the appliance, and if supplied will be charged 4/- extra.

Unique Pocket Level, No. 1331, is now advanced to 4/-. Post free 4/3.

Slate Holing Machine, No. 2232, is 30/-, the price given on page 286 being due to a clerical error.

Printed at the London and County Printing Works, Bazaar Buildings, Drury Lane, London, W.C.

THE
"INVICTA"

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